DOMESTIC ENGINEERING

A Weekly Record of Progress in Plumbing, Heating, Ventilation and all Matters Pertaining to Domestic Sanitation

Whole No. 1356 CHICAGO, DECEMBER 7, 1918 Vol. 85, No. 10

Has America ever thought of sending out plumbing missionaries? I mean plumbers who would demonstrate to other nations the great comfort, convenience and healthfulness of the American methods? In a moment of philanthropy you might do that. It might even be possible to combine business with the philanthropy.—Barry Pain, English Author.

OPPORTUNITY FOR AMERICAN PLUMBING IN RE-BUILDING SHELL SWEPT EUROPE.

NOW that the long night of horror is gone, and the morning of freedom is upon the world, the war-stricken and homeless families in Belgium and western France are awaiting the restoration of those domestic comforts and conveniences, which they enjoyed before the black vulture of desolation spread his pinions over the land.

Many thousands of families are now existing in habitations, little better than primitive hovels. These abodes, many of which are wretched makeshifts, are usually poorly ventilated and without the rudiments of modern water supply and sewage disposal. Obviously health and decent home comfort cannot be maintained amid such conditions.

If the mortality rate of the devastated sections is to be reduced to a minimum, immediate action in the restoration of sanitary housing must be taken. Doubtless such action is being hastened by the governmental authorities of the countries concerned.

American co-operation along sanitary lines will certainly be accepted and appreciated in the great task of replacement of the homes, which were demolished.

Opportunity to alleviate the sufferings of homeless humanity, is presented to America. Let us proceed to co-operate in rushing this process of replacement—in order that the homeless may soon return to conditions of housing and sanitation which will far supersede those which prevail in the shell-blasted areas.

America has been worthy of its past in the fight against tyranny. Let her be worthy of the future in the fight against the evils of insanitation in the countries that suffered under the iron heel of the invader.

Hence the question: Will sanitary plumbing fixtures—Made in America—play an important role in the peaceful drama of reconstruction in the shell-wrecked districts of the Old World?

This question has no doubt arisen in the minds of wide-awake manufacturers and the progressives in the plumbing trade, who are interested in extending the principles of American sanitation.

Publicity in the newspapers of France and Belgium, setting forth the urgency of sanitary housing, and emphasizing the importance of modern plumbing systems in the program of rebuilding, would assuredly redound to the lasting benefit of the demolished sections.

The thousands of homeless families, who endured the bitterness of years of oppression and whose deep sorrows can only be soothed by the hand of time, are in urgent need of the health-conserving benefits and comforts of American plumbing and American sanitary service.

The housing situation in war-stricken Europe is a serious one. It must be solved and with speed. Otherwise disease and pestilence may sweep through the land, as a direct result of insanitary conditions.

The spirit of "hands across the sea" is now in order in this big job of "Making Europe Safe for Health," as well as for Democracy. American plumbing materials are needed, in view of the fact that during the war, the foreign manufacturers of sanitary ware and other plumbing specialties, were obliged to dismantle their plants, some of which were situated in the very path of the enemy's operations. Before these plants can resume activity, some time will doubtless elapse. Hence American manufacturers of sanitary enamel ware, earthenware, soil pipe, tubular goods and plumbers' brass specialties will have an unparalleled opportunity to introduce their products in the vast work of rebuilding.

American sanitary reputation has followed the Flag—even into far distant lands. Captain William C. Groeniger, state plumbing inspector of Ohio and president of the American Society of Sanitary Engineering, champion of sanitary legislation, who is solving the intricate problems of water supply and sewage disposal in Jerusalem, under the auspices of the American Red Cross, is a conspicuous figure in this work. Feats of sanitary engineering were also accomplished in cleaning up the camps behind the lines on the Western Front. These feats of our sanitary corps were a revelation to British and French commanders who inspected the American shower baths, lavatories and sewage disposal systems.

FAULTY STEAM FITTING

Some Common Errors Which Reduce Efficiency in a Heating System

By Frederick Grant

WHAT might otherwise be considered as a good job of steam fitting is often impaired by some carelessly connected radiator, pipe, fixture, or other part of a heating system. Errors are made which result in seriously affecting the efficiency of the apparatus. Sometimes these faulty connections are easily discovered and rectified, and again they are covered up between floors or are otherwise hidden and are located only with extreme difficulty.

Poor pipe fitting is not always the result of carelessness. It may be due to the fact that the steam fitter, who constructed the work, was lacking in the ability to properly dispose of some peculiar condition, which may have been encountered during the installation of the apparatus, and investigation will show that the error could have been avoided by the application of a little horse-sense in solving the problem.

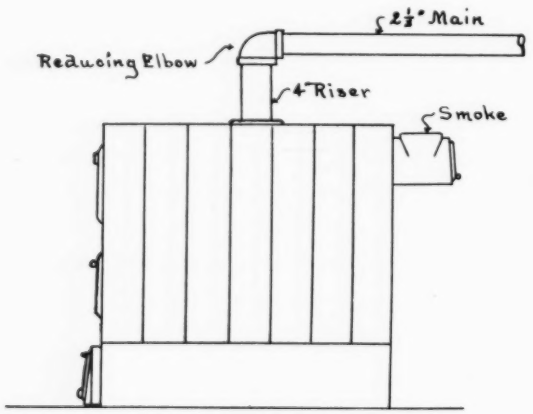


Fig. 1.

In this article the writer desires to call attention to some of the more common and frequently noted errors, and to make some suggestions for the benefit of the steam fitter with limited experience and little knowledge of some of the peculiar phases of steam fitting work.

As the installation of a heating apparatus begins at the boiler, it is important that the piping system should be started in a proper manner. A very common error, found at the beginning of the job, is the method used in connecting the main from the riser (or risers) out of the boiler. Let us assume that the system is a low pressure gravity steam heating apparatus, and that the work requires a 2½-inch main. We will suppose that the boiler is tapped for one 4-inch outlet. The steam fitter, no doubt understanding the advantage of using a large riser out of the boiler, starts the main in the manner illustrated by Fig. 1, connecting the main to the riser by using a 4x2½-inch reducing elbow. This judgment, as to the size of the riser, is good and as planned there is little chance of lifting water into the main owing to a high velocity of the steam at the outlet of the boiler, but the fitter has entirely overlooked the element of expansion. There may be some stiff or rigid connection from the main quite close to the boiler, or the main may end in such a manner that no expansion of it in that direction is possible. The method, illustrated by Fig. 1, does not provide for this or other possible forms of expansion. It is a better plan to always use two elbows at the top of the riser, and to start the main as indicated by Fig. 2. The elbow immediately on top of the riser should be the same size as this pipe, and the second elbow, or the one directly connecting with the main should be a reducing elbow of the proper size for the work.

The expansion of risers should also receive careful consideration. Assuming that a branch from the main is to supply a riser to a radiator on an upper floor, and that the radiator valve is to be attached directly to the top of

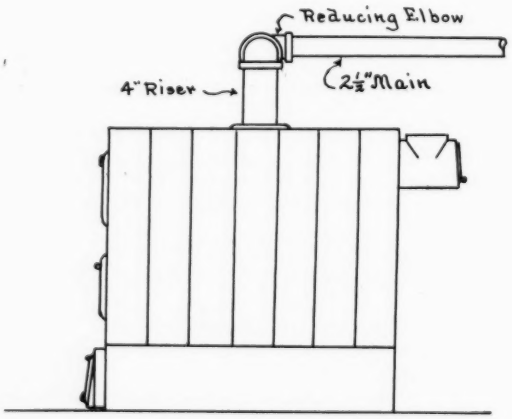


Fig. 2.

the riser, the expansion of it must be provided for. This may not seem of importance, unless the results of the expansion are considered. Should the riser be of considerable length, the expansion of it will act in either of two ways. It will raise the supply end of the radiator from the floor and, on a one-pipe job, will interfere with the

drainage of condensation from the radiator, or, should the branch to the riser have but very little pitch, the expansion will force the end of the branch downward a sufficient distance to trap it and allow the water of condensation to lodge in it as illustrated by Fig. 3. This condition is most frequently noted on work where 90-degree elbows are employed in connecting the branches to the main. It also occurs at times, if the riser is measured incorrectly and cut too long, or when plumbing or straightening it. The proper method of connection necessitates the use of a swing joint, using two elbows at the base of the riser as shown by Fig. 4.

The question of expansion is an important one. Plaster has been broken quite frequently when a ceiling plate securely attached to a riser has been set too close to the ceiling. In finished basements plaster is often broken by the expansion of a steam main forcing the riser back. Fittings are frequently broken by restricted expansion, that is, under conditions where the pipe had no chance to expand without breaking something.

In many shops steam fitters are taught to cut crooked threads on the end of a branch so that the elbow may be set to throw the riser plumb and straight. On good work this method is not allowed, and in general it is

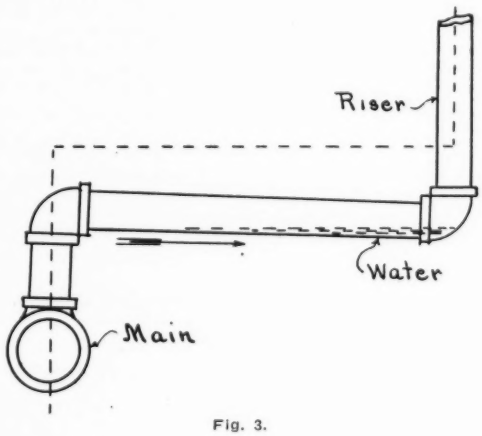


Fig. 3.

poor practice. We have seen pipe cut almost through at one side of the thread where the die had dug into it. In shops, where this method is practised, we may look for other careless methods of steam fitting. The use of a crooked thread is allowable only when circumstances absolutely require it. The general practice of using a crooked thread on any and all occasions should be condemned. Pitched elbows, or elbows tapped in such a manner that, when used on the end of a branch, they will allow of the branch being given the proper pitch and yet allow the riser or radiator spud to stand plumb and straight, should be used as illustrated by Fig. 5.

The failure to provide for perfect drainage of the condensation by the proper alignment of the piping, or by making pipe connections through which the steam will not short-circuit, is a fault quite frequently noted when inspecting the work of an inexperienced steam fitter. All snapping or pounding of the pipes is due entirely to restricted expansion or to imperfect drainage—most frequently the latter. When heat is desired, after the system has been allowed to cool, the drafts of the boiler are opened, and shortly thereafter there is a chug, chug, in the main, and perhaps a little later a boom, boom, like the sound of a distant cannon, and still later a snapping and cracking (water-hammer), apparently in the branches and risers, all of which is preventable. There may be lodgment of the water at the end of branches, as indicated by Fig. 3, or there may be a reduction in the size of the main at some point, and this reduction has been made without providing for drainage. Fitters of large experience know the importance of guarding against these con-

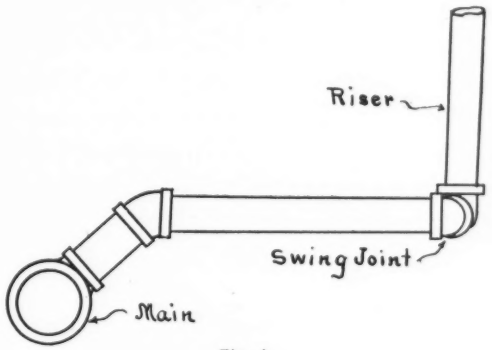


Fig. 4.

ditions, and it is because of this fact that we suggest that these errors are usually found on the work of fitters having only a limited knowledge of pipe fitting.

When a common reducing fitting is used in reducing the size of a main, the water of condensation will lodge in the larger pipe back of the fitting, the depth of the water depending upon the amount of the reduction. Fig. 6 illustrates this detail, the dotted lines indicating the depth of the water. If one could look directly into the end of the pipe at the reduced end of the fitting, the water would show as indicated on the small cross-sectional drawing at the right of the illustration, which represents the two sizes of the pipe. The tee shown should be tapped eccentric on the reduced end, as illustrated by Fig. 7, and the main, having the proper pitch, would then drain perfectly.

If conditions require a reduction of the main at some point, where a tee for a branch connection is unnecessary, an eccentric reducing coupling may be used, or, if conditions will allow of it, a bleeder may be taken from the

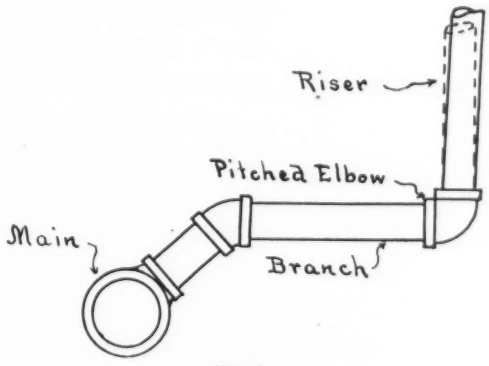


Fig. 5.

point of reduction. This bleeder, if one is employed, should connect into a wet return, as illustrated by Fig. 8, the method, of course, depending upon there being a wet return convenient and available for the purpose. We might add as a suggestion, that when the main is of considerable length, it is a good plan to relieve it of condensation, whenever it is possible to do so. This method will

increase the capacity and effectiveness of it beyond the point of reduction. The use of eccentric fittings on steam mains and at other required points is a mark of good steam fitting, and their general use shows a desire on the part of the fitter to construct the work in the best manner possible.

The errors or faults, to which we have called attention, relate to steam heating—low pressure or vacuum. In connection with the ordinary type of low pressure gravity

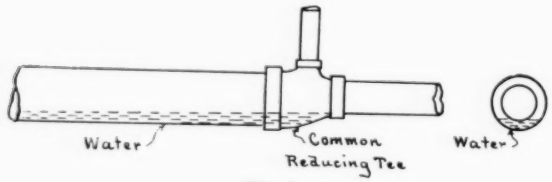


Fig. 6.

heating there is one other feature to which particular attention is directed. We believe that no one in the trade will gainsay the fact that air in the system is the arch-enemy of the steam fitter. To relate a very small portion of the trouble caused by air would require a volume of considerable size. It is a fact that air in heating systems is responsible for more of the troubles of the steam fitter than he is usually willing to admit. Poor circulation, clogged and ineffective heating surfaces, false registration of the height of water in return pipes, and many other annoyances are directly traceable to air in the system. The application of vacuum principles to heating systems has helped to lessen these annoyances somewhat, but the ordinary system is without this assistance.

Probably every fitter, experienced and inexperienced, knows that each unit of radiation of a heating system, coil or radiator, requires an outlet for air, and that it is customary to place a valve, plain or automatic, on each air outlet. Steam and air, being of different density, will not mix, and air bottled up or pocketed in various parts of the system renders such part ineffective. The inconvenience of operating air valves by hand has been done away with by the development of the automatic air valve. The intelligent use of air valves at various points on the piping system will greatly improve the working of it. When a drop is made with a bleeder or drip to a wet return, as shown by Fig. 8, an automatic air valve should be used at the top of the vertical pipe, where the drop is made as

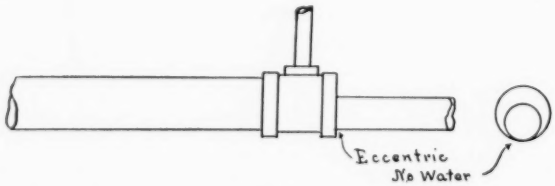


Fig. 7.

indicated in the illustration; also, an automatic air valve should always be placed at the end of a steam main or dry return before a drop is made below the water-line. If the raditors or coils are supplied with steam from the drop risers of an overhead system, an automatic air valve should be placed on each riser below the point where the last or lowest radiator is connected, and well above the water-line of the system.

We cannot too strongly advise against the use of cheap automatic air valves. They are frequently the source of much trouble and annoyance, and the expense involved in looking after them will more than pay the difference between their cost and the price of good first class valves. The cost of good valves is a very small item when compared with the total cost of the job. If the job is a heating system of ten radiators, it will probably require a total of twelve air valves. Say, that a common valve will cost 50 cents each, the cost of air valves for the job will be six dollars. Suppose, that a good valve costs one dollar and a half, the difference in cost for the job will be but twelve dollars, or possibly two per cent of the cost of the entire job, and yet, the item represented is one of the most vital and important parts of the system.

Good air valves are frequently made inefficient by becoming clogged with dirt and oily scum from the heating system. A careful and experienced fitter will not place the valves on the work, until the system has been in operation for a time, and the grease, oil and other foreign matter, has been removed from the apparatus by blowing off the boiler. It is usual practice to place common compression valves on the system during this period. The

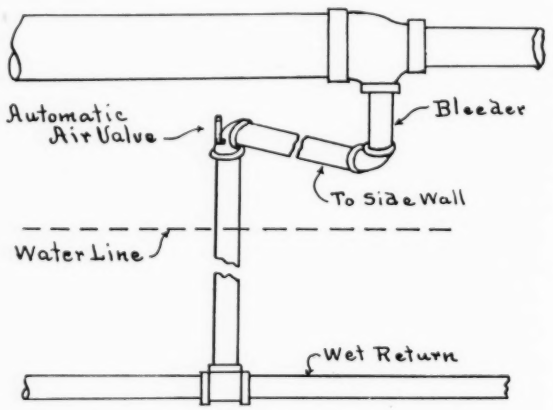


Fig. 8.

fitter, who places the automatic air valves on a job before the initial firing of the boiler, commits a very grave error.

In line with other details designed to help the fitter, there is one other matter to which we would call attention. We have frequently dropped in on a job where our steam fitters were at work and found the men nervous, and spending a great deal of time, in trying to make a somewhat difficult or peculiar pipe connection. Perhaps the space available was limited and this fact helped to confuse. When a condition of this kind is met, stop all effort to make the connection, and go back to the vise, where the fittings, nipples, etc., are no doubt lined up ready for use. Select a long nipple, which shall represent the pipe from which the connection is to be made, and with fittings and nipples screwed together by hand, dope out the method of doing the work, and it is ten-to-one that the connection can then be quickly and properly made.

A Proper Start.

"So your husband refused to buy you an automobile?"

"Not exactly refused; he said I ought first to become familiar with machinery in general, so he bought me a sewing machine."—"Boston Transcript."

Our army cannot be demobilized until the fruits of victory are assured. Continue to buy War Savings Stamps

CONCRETE SEPTIC TANKS *and* SUB-SOIL DISPOSAL FIELDS *for* COUNTRY HOMES

Notes on the Design and Construction of Such Systems

By John H. Perry

NOW that the war is over, the Kaiser down and out, and Germany fixed so that she will not threaten the decent-living nations of the world for a long, long time, we may turn our attention from war work to peaceful progress.

In doing so we cannot do better than look into the problem of domestic sanitation and see what benefits our trade at the present time.

Construction work is what we want now. Not construction of ammunition plants, and military works, but construction work of a peaceful nature, which tends to build up a bigger and better America.

Naturally, we scan the horizon for indications of the arrival of new building business, since the ban has been lifted in that line. It may not be in sight yet, but it will come, and it will come quickly when it starts.

Big things do not always move slowly nowadays, as for example, witness the stupendous debacle of the greatest military machine the world has ever seen, the Germans' big Hindenburg bubble.

When the idea fairly enters the heads of our American people that it is time to get to work and improve our home affairs—when people, who have saved some of their high war wages or big war profits, realize that they need better homes and better sanitary conditions, then the wave of new business will lift us from the flats, where lots have been high and dry since we entered the war.

In the desire for better sanitary conditions, particularly in country towns, villages and farms, there will and must be a large demand for septic tanks and disposal fields to take care of the sewage from the numerous houses, both old and new, which will soon be equipped with modern plumbing systems.

Just how these tanks should be built, and fields arranged, depends a great deal upon the size of building, or number of buildings, to be served by them; also on the topography of the ground, the materials best available in the district, the character of soil, final place of disposal, etc.

In a general way, however, the following fundamental requirements may be considered:

First, the sewage from all water closets, sinks, laundry tubs and other fixtures of a similar character, should be piped up and discharged into the septic tank, which is a water-tight chamber, or chambers, built to receive and hold such sewage, until the liquid is separated from the solids.

Second, the design of septic tank should be such as to ensure, not only a reasonably good separation of liquid from solids, but also allow a proper digestion of the solids so that they may be reduced in volume and changed to their original elements of gas, water and insoluble or indigestible solids, which we call sludge.

Third, the design of the tank must be such that solids

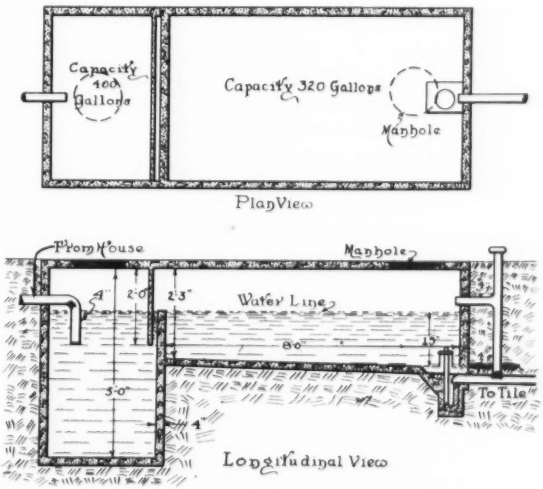


Fig. 1.

will be retained in tank in a quiescent compartment with means to facilitate their removal periodically; also a compartment where the liquid may remain quiescent for a certain period of time to precipitate its flocculent solids, and allow putrescible matter held in solution to undergo a certain bacterial decomposition, which removes putrescible matter from it and renders it fit for disposal elsewhere.

Fourth, a place of final disposal, which may be into a river, sea, lake, creek, underground or on the surface of the ground. Every sewage system must have a place of

disposal. The septic tank is just an interceptor between the house, where the sewage is created, and the place of final disposal. It is supposed to intercept all or nearly all of the solids, and digest them, while the liquid portion only goes to the place of final disposal.

These then are the essential elements of nearly every septic tank sewerage job, which plumbers may have to handle. In addition to them, however, are many lesser things which must receive consideration in the design of systems for sewage disposal. One of the most important of these is the sewage siphon, which is an automatic device that should always be used in combination with septic tanks and disposal fields, when the condition, or grade, of the ground permits its use.

The object of the sewage siphon is to discharge the sewage in certain fixed quantities, periodically into the subsoil field, or onto the filter beds, whichever may happen to be used as a process of purifying the sewage water on its way from the septic tank to the place of final disposal. In flat country, where the ground is nearly level, it is rather a difficult matter to obtain the fall necessary for the successful use of sewage siphons.

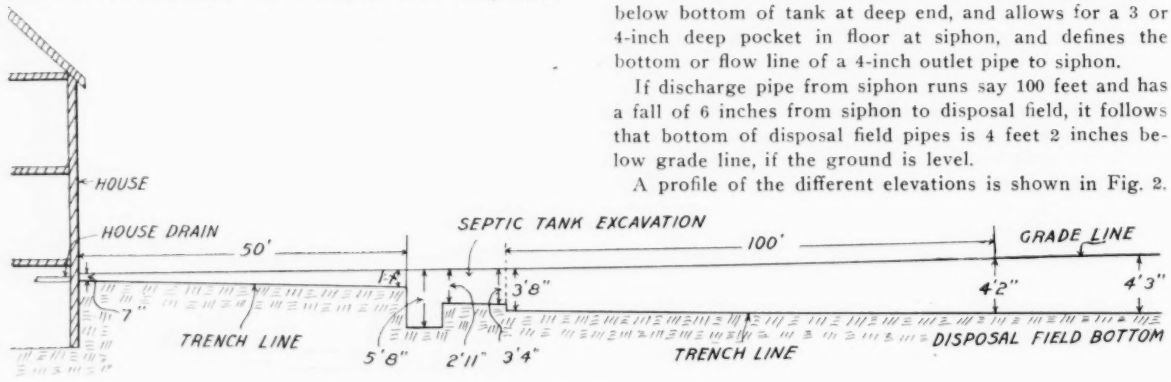


Fig. 2.

Perhaps the arrangement shown in Fig. 1, is as well suited to flat country work as we can find. It is a septic tank and dozing chamber combined. The septic tank portion shown at the left is 5 feet deep, by 3 feet long, by about 4 feet or 4 feet 6 inches wide. The depth of water is about 4 feet.

The raw sewage pipe from house enters at a depth of about 1 foot below the ground line, which is as close to the surface as we dare keep it. Even then this line should be covered with manure or straw during winter to prevent it from freezing. This raw sewage pipe dips into the septic tank water about 1 ft. to guide the solids downward and permit them to quickly settle on the bottom. It also prevents undue agitation of the liquid in this tank. Some plumbers turn the raw sewage inlet down with a bend as shown. We think, however, it is preferable to turn down with a tee, which is open on top for ventilation. Or if elbow is used, it would appear that a hole, say 1 inch in diameter, should be punched through top of bend for air relief at least.

In connection with septic tank is seen a baffle wall made of concrete, say 2 to 3 inches thick. Back of the baffle is a narrow passage between it and the partition wall. The liquid in deep tank flows slowly up this narrow passage and overflows the partition wall, or weir and falls into the secondary or dozing tank at the right of Fig. 1. The water overflowing the weir has parted with most of the solid matter, which it carried from the house to the tank. That solid matter lies in the deep tank and decomposes there. But some small particles of solid matter, as well as some putrescent matter in solution are carried over the weir. This goes through the final stage of decomposition in the dozing tank, and is, or should be, pretty well digested, or broken up by bacterial action in this latter tank before it finally is discharged to the place of filtration or final disposal.

Note how shallow the dozing tank is. The maximum depth of water is only 15 inches. Deducting 3 inches for the slope of bottom down to the siphon, leaves only 12 inches of water at the weir end. The dozing tank at the high end is only 2 feet 3 inches from roof to floor. This allows 15 inches from roof to weir level, which is the maximum water line of dozing tank. Allowing 4 inches for thickness of concrete roof, the high point of dozing tank floor is only 2 feet 7 inches below grade line.

Now look at the siphon, which is shown located at lowest point of dozing tank. Its outlet need not be more than 3 feet 8 inches below grade. This is about 9 inches below bottom of tank at deep end, and allows for a 3 or 4-inch deep pocket in floor at siphon, and defines the bottom or flow line of a 4-inch outlet pipe to siphon.

If discharge pipe from siphon runs say 100 feet and has a fall of 6 inches from siphon to disposal field, it follows that bottom of disposal field pipes is 4 feet 2 inches below grade line, if the ground is level.

A profile of the different elevations is shown in Fig. 2.

The house is 50 feet from septic tank, and disposal field is 100 feet from said tank. The house sewer, if for an ordinary house, may be 4-inch to 6-inch best quality, straight, smooth, selected earthen pipe of vitreous ware. Such a pipe should work well with a minimum pitch of 1 foot in 50 feet. This pitch should carry the solids quickly to tank, if the joints are tight, and no cement or other obstructions exist inside to retard the flow or catch the solids.

It will be noted in Fig. 2 that the depths of excavations are shown. The trench for house sewer starts at house with a depth of 7 inches. If the sewer pipe is 4-inch vitreous pipe, the top of hub at this point will be only about 1½ inches below grade line. Down at the lower end of this trench, where house sewer enters the tank, the top of hub is about 13 to 14 inches below grade. This means that in cold climates the house sewer trench line must be protected each winter by a top covering of manure or other convenient covering. If left uncovered, this pipe is quite liable to freeze.

It would, of course, be expected that the owner of the building will raise the grade around the cellar walls perhaps 1 foot, sloping it down from the building for the purpose of preventing rain water from getting into his cellar. The ground around every house on flat country should, we think, be filled in around the building this way as a protection to the cellar. This will help deepen the sewer trench at its shallowest part, and at least will protect the earthen drain from surface damage.

Now note the excavation levels for septic tank. The

bottom of deepest part is 5 feet 8 inches. The average bottom depth of dozing tank is 3 feet. The ditch at outlet of siphon is 3 feet 8 inches. The trench bottom from siphon tank to inlet for disposal field is 4 feet 2 inches, which means a pitch of 6 inches in 100 feet in this line. The disposal field pipes themselves, however, are practically level, having a pitch of only 1 inch or so, just enough to let the water run slowly to the ends of the lines.

In the writer's opinion this arrangement is very good for level country work, where the subsoil is of a porous character so that the sewage effluent can soak away from the disposal field.

Before ending our discussion on the septic tank, note its capacity, namely 400 gallons in the first chamber and 320 gallons in the second chamber. This size is large enough for a good-sized family. It should easily serve 10 to 20 people. Suppose it serves 20 people. The total volume of sewage would probably be about 800 gallons in 24 hours. That means the sewage retention in the first chamber will be about 12 hours. In the second chamber it will be perhaps about 8 hours, if we figure on a discharge of about 250 gallons at each discharge of siphon.

This means that siphon works three times each day approximately. Assuming that two hours are required for each doze to percolate away from the disposal field, there is a period of rest between each flush, averaging 6 hours. These 6 hours of inaction serve as an aerating period for the disposal field and no doubt help materially in preventing clogging of the field.

Owing to the depth of the field in level country as shown by Fig. 2, the air may not get down to the sewage filtration bed very freely, particularly if the ground is heavy. In such a case then it would appear advisable to

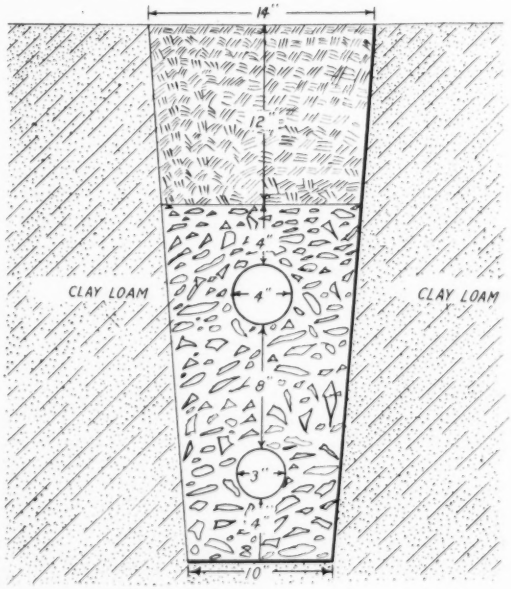


Fig. 3.

have one or more ventilator openings, which admit free access of air to the bed. Then the results from a deep field may be quite satisfactory, and filtration quite permanent.

In cases where the ground has a good slope down from house to disposal field, the problem is much easier. The pipes can be laid below the frost line. The dozing tank can be deeper and shorter, and the disposal field pipes may be nearer the surface, say, with a good earth cover of 1 ft. to 16 inches.

In cases, where the ground is of a clayey formation and practically impervious to sewage, which frequently exists in the hilly country, an artifical percolating or filtering bed may be formed under the tile disposal field pipes, as

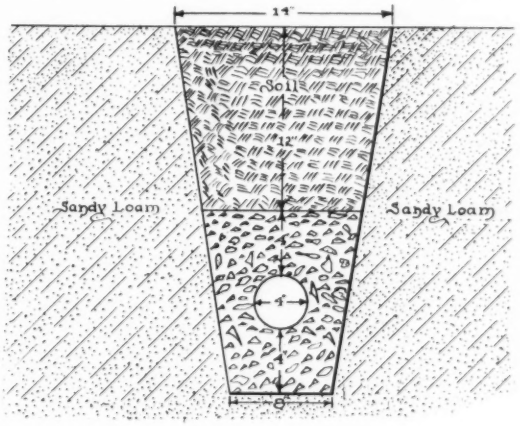


Fig. 4.

shown in Fig. 3. This is a section through one of the disposal field trenches.

The trench is dug 2 ft. 11 inches or 3 ft. deep, the bottom being 10 inches wide and top about 14 inches wide. A bed of cinders, gravel or coarse sand, 4 inches deep, is spread along bottom of all disposal field ditches. A set of 3-inch field tile is laid all along these trenches, having their outlets joined together and discharged into a river, creek or somewhere

Then whatever available filtering material, such as coarse sand, gravel or cinders, can be obtained, is filled in to a depth of, say 8 inches, over the 3-inch or subsoil pipes. This is packed down and bottomed straight and true with a slight fall down in the direction of flow. Then the 4-inch distributing lines of field tile are laid. Over these pipes, more cinders or filtering material are laid and packed until a space of 12 inches deep is left for final filling in.

This final filling should be the top dirt, which was originally dug out, because it contains much humus and plant food, while the deeper dirt is sterile and lacks nutrition. Fig. 3 shows how such a filling would appear and makes it quite plain that sewage water filtering down from the 4-inch line to the 3-inch line must pass through at least 8 inches of filtering material. Fine particles of flocculent solids and a great percentage of the bacteria are caught in the filter bed allowing comparatively clear water to flow to the creek or river.

The dozing tank fills all the upper pipes, say, once every 8 hours. The entire filter bed then is brought into immediate action. The contents of the 4-inch lines filter down through the 3-inch lines. Then the upper lines, as well as the interstices, in the filter bed, become charged with air again. This air has a purifying effect on the field, and not only aids the filtration, but prolongs the period of usefulness of the filter.

In places where the ground is sandy loam and where the subsoil lines cannot be used, because there is no place to discharge them, it is frequently advisable to fill the trench with broken stone, gravel, cinders, etc., around the

(Continued on Page 391.)

HOUSE TANKS IN LARGE BUILDINGS.

By Harold L. Alt.

The writer has found so much variation of opinion in regard to proper house tank capacities that the trouble has been taken to collect data from a considerable number of representative buildings of the United States and Canada for the purpose of showing approximately what the designers throughout the continent—particularly in the eastern portion—are doing in this relation.

The table accompanying this article is arranged into various classes of buildings as follows: Residences, department stores, schools, hotels, office buildings, apartment houses, railway stations, public and semi-public buildings such as libraries, institutional and state buildings. To avoid excessive length a few buildings of each type are quoted, these usually being of the best construction and indicating the most approved and advanced practice in regard to their tank installations.

Building.	Location.	Tanks.	Capacity.	Elevation.	Service.	Mat.
Rockefeller Residence	New York City	1	7,000	Top	House	Steel
Straight Residence	New York City	1	2,500	Top	House	Steel
Lewisohn Residence	Ardsley, N. Y.	1	1,300	Top	House	Steel
Stern Dept. Store	New York City	2	10,000	Top	House	Wood
Bamberger Dept. Store	Newark, N. J.	2	6,000	Top	City Water	.....
		1	1,500	Top	Artesian Well	.....
No. 46 School	New York City	1	1,000	Top	House	Steel
Elizabeth High School	Elizabeth, N. J	1	5,000	Top	House	Steel
Bushwick High School	Brooklyn, N. Y	1	5,000	Top	Flush	Steel
		1	500	Top	House	Steel
Davenport Hotel	Spokane, Wash	1	5,000	Top	Flush	Steel
		1	1,500	Top	House	Steel
Chateau Laurier	Ottawa, Can	1	1,300	Top	House	Steel
Hotel Kimball	Springfield, Mass	1	10,000	Top	House	Steel
Equitable Bldg.	New York City	2	5,000	38th Story	House	Steel
		2	20,000	38th Story	Fire	Steel
		2	5,000	26th Story	House	Steel
		2	5,000	16th Story	House	Steel
Railway Exchange	St. Louis, Mo	2	9,000	Top	House	Steel
		2	8,000	Top	House	Steel
Kinney Bldg.	Newark, N. J	1	10,000	Top	House	.....
Rogers-Peet	New York City	1	5,000	Top	House	.....
1st Nat. Bank	Bridgeport, Conn	1	10,000	Top	House	Steel
Aeolian Hall	New York City	1	18,000	Top	House	Steel
Municipal Bldg.	New York City	4	3,500	35th Story	House	Steel
			2,500	35th Story	Fire	Steel
		2	10,000	25th Story	House	Steel
			20,000	25th Story	House	Steel
		1	8,000	14th Story	Fire	Steel
			10,000	14th Story	House	Steel
Union Arcade Bldg.	Pittsburgh, Pa.	2	8,000	Top	House	Steel
		2	10,000	Top	Fire	Steel
Woolworth Bldg.	New York City	1	1,200	53rd Story	House	Steel
		1	9,900	50th Story	House	Steel
		1	3,100	38th Story	House	Steel
		3	20,000	27th Story	House	Steel
		1	6,200	14th Story	House	Steel
State Bank	Newark, N. J	1	6,000	Top	House	Steel
Apartment House	New York City	1	8,400	Top	House	Steel
Apartment House	Chicago	2	3,000	Top	House	Steel
Railway Station	Ottawa, Can	1	2,000	Top	House	Steel
Public Library	New York City	4	7,000	Top	House	Steel
Russell-Sage Found.	New York City	1	10,000	Top	House	Steel
Seamen's Church	New York City	1	10,000	Top	House	Steel
Y. W. C. A.	Newark, N. J	1	5,000	Top	House	Steel
Capitol Bldg.	Jefferson City, Mo	2	6,000	Top	House	Steel

Note:—Where house and fire service is listed combination tanks are installed.

From the above list it can be seen that the tank usually employed for a building of moderate size is usually made of about 5,000 gallons capacity; for large buildings about 10,000 and for very large buildings 5,000 to 10,000 for each section—i. e., each water pressure. The smaller the building, the greater is the variation in tank capacity, as can be seen by reference to the list of residences. No attempt is made by the writer to reconcile these various capacities, this being simply a record of what was placed in the various structures.

ALUMINUM ON CAST IRON.

It is stated by Metall und Erz that a process for covering the surface of cast iron with aluminum has been discovered and tested in practice. The iron is first galvanized or tin coated and then plunged in a bath of molten aluminum at a temperature of 700 to 800 degrees C. While in the bath the tin or the zinc goes over to the molten aluminum and is replaced on the surface of the iron by aluminum. Two or three baths are required, but the larger part of the tin or zinc is displaced by the aluminum in the first bath.

The advantages of the process are remarkable firmness of adhesion and economy compared with pure aluminum.

The Reproof.

During the French revolution a priest rode in a tumbrel to the guillotine with two persons—one a marquis, the other a common thief. As the cart jolted through the crowded streets the citizens shouted maledictions on its occupants.

"Down with you, beasts of the aristocracy!"

The marquis smiled proudly, but the criminal was vexed.

"My good friends," he cried, "I am not an aristocrat. I am a thief."

Then the priest touched his arm gently, murmuring:

"Ah, my son, this is no time for vanity!"

Save one-tenth of your December income—Buy W. W. S.

QUESTIONS & ANSWERS

ADVISES AGAINST PLACING RADIATOR BELOW WATER-LINE IN BOILER.

Editor "Domestic Engineering:"—Enclosed you will find a blue print of a basement room in an apartment building, which the owner insists on heating by installing radiator under stair landing. The building is heated with a two-pipe system with vented returns to attic space and connected to plumbers' stack, thermo-grade valves being used on the radiators. The boilers have a water line of 54 inches, are pitted about 18 inches below floor level, and carry a pressure of about 6 ounces. I have made many suggestions such as running condensation to sewer and using automatic feed, etc. Is there a suitable motor driven device on the market that would answer the purpose of raising the condensation from this radiator the required heighth? Your advice on the matter would be very much appreciated.

New York. R. M. J.

A corner section of the floor plan of the basement store room is shown by Fig. 1. The notations made by correspondent upon the blue print submitted are marked on this sketch. The owner apparently insists that a radiator shall be located under the platform of the stairs leading to

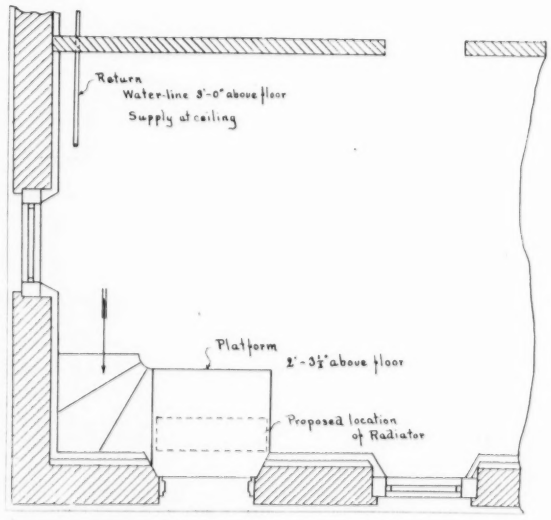


Fig. 1.

the street, and the data given shows that all of the radiating surface required will be below the water-line of the apparatus, which is a modified system operating at a few ounces of pressure.

Correspondent is perfectly right in trying to dissuade the owner from placing the radiator in this position. There are probably objections to the use of ceiling radiators, which could be hung above the water-line. Of course, radiators hung from the ceiling are not as effective as those which are placed on the floor against an outer wall. It would seem, however, that two or three panels of wall radiation might be hung against the outer side and end walls of the room well above the water-

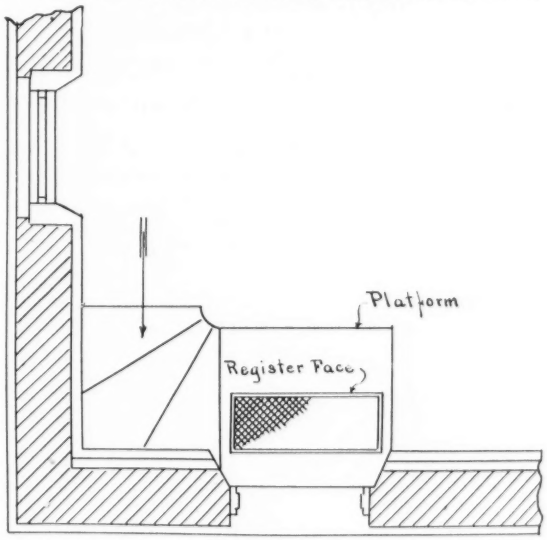


Fig. 2.

line. This method would provide thoroughly effective heating surface, which would drain off condensation by gravity. The panels of radiation could be installed in such a manner that they would not detract from the appearance of the decoration of the room.

Regarding the use of a motor driven device, we can advise that there are several different kinds of condensation pumps available, which are automatic in operation and motor-driven. With one of these pumps the condensation can be lifted into a return, which is at a higher level, or the water can be delivered direct to the boiler against boiler pressure.

The usual method of operation of an automatic condensation pump is as follows: The condensation flows by gravity to a receiver, which may be a tilting tank swinging on trunions and weighted to hold it in a horizontal position while filling. As the receiver fills with condensation the weight of the same causes the tank to tilt, this movement closing the controlling switch on the motor circuit. This action starts the motor and puts the pump in operation, which continues to discharge the water as long as any is supplied by the receiver. The receiver, when empty, returns to its former position for filling and this movement breaks the electric circuit and stops the motor and pump. The receiver of some automatic condensation pumps is controlled by a float. In applying

such a device on this work, the difficulty lies in the fact that the smallest size of pump, which is regularly to be had, is much too large to handle the condensation from a single radiator, and is therefore too expensive to be considered.

We call the attention of correspondent to another feature in connection with the locating of the radiator under the platform of the stairs. If it is to be installed in this position, it will be advisable to place a register face in the floor of the platform as shown by Fig. 2, in order to obtain a free circulation of the air heated by the radiator; otherwise the efficiency of the radiator will be seriously reduced. The height of the platform above the floor is given as 2 ft. 3½ inches and by providing for a free circulation of air a 26-inch, or possibly a 23-inch, radiator can be used.

AN AIR-BOUND PLUMBING SYSTEM.

Editor, "Domestic Engineering:"—Fig. 1 is a rough sketch of a range boiler, supply tank and fixtures, as they are arranged now. Can this arrangement be made to work?

We, at times, can get warm water out of the faucets, and sometimes not. The boiler gets real hot and then we cannot get any hot water. The cold faucets always work. At times we cannot draw water out of hot water faucets, when everything is cold, and at other times we can.

Fig. 2 shows how I tried to remedy the trouble. I changed the ½-inch vent at top of hot water pipe over

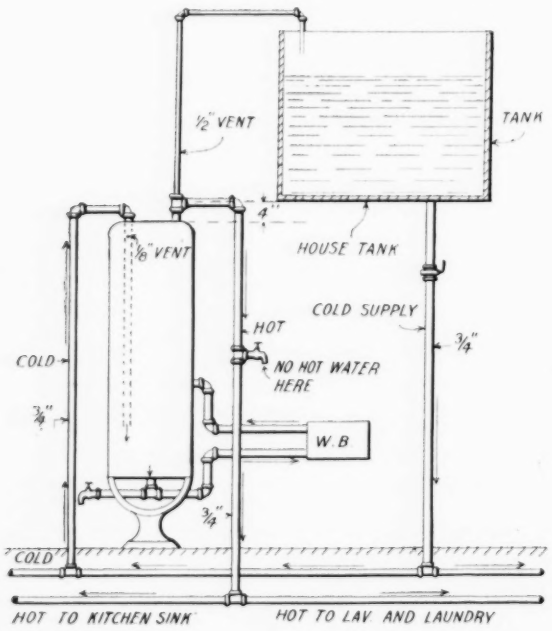


Fig. 1.

boiler, placing a tee on the horizontal part looking up. From that I ran a ½-inch pipe up over and into the tank.

I also disconnected the cold supply at top of boiler placing a similar vent there as shown.

Ohio. C. H. E.

Yes, the arrangement shown in Fig. 1 can be made to work, providing it is not allowed to become air-bound at any point, either at connections on top of boiler, or anywhere else in the piping system, providing the pipes are not choked in any way anywhere, and providing there is water in the tank.

Your remedy, shown in Fig. 2, is a sensible one. It relieves all air from highest point of cold supply line. It is a good thing to have on such a system, where bottom of tank is only 4 inches above top of boiler.

We believe the irregularity of hot water supply at faucets is due to the irregular water level in tank.

When tank is full, you get water at hot faucets; when nearly empty, you cannot get water at these faucets. This,

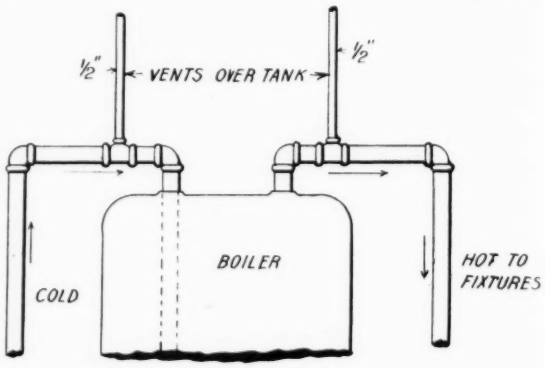


Fig. 2.

we believe, is due to the presence of air in top of cold supply line in Fig. 1. The hydraulic head is then not enough to push water up through the air-lock.

The air-pipe, or vent, you have added, as shown in Fig 2, should permanently remedy that. If it does not, then you may look for an air-lock somewhere else in the piping. It may be in the cellar. Wherever it is, it must be found, and the pipe straightened out or vented.

The piping in a low pressure system of this kind must be graded and vented so that all air may gravitate up and escape from all the piping and boiler, otherwise the low head when tank is nearly empty will fail to push water through the system against the air-locks.

December 11 and 12, 1918.—The regular quarterly meeting of the National Association of Brass Manufacturers, in New York City, at Hotel Astor.

January 14, 15 and 16, 1919.—The annual convention of Iowa Master Plumbers' Association, at Cedar Rapids, Iowa.

January 14, 15 and 16, 1919.—The twenty-fifth annual convention of the Wisconsin Master Plumbers' Association, at Milwaukee, Wis., with headquarters at the Hotel Wisconsin.

January 28, 29 and 30, 1919.—The annual convention of the Illinois Master Plumbers' Association, at Danville, Ill., with headquarters at the Harrison Hotel.

Don't stop buying War Savings Stamps until you have purchased all you can. Don't be a quitter—buy your quota.

LEGAL QUESTIONNAIRE

*Can a Real Estate Broker Demand Commission, When He Does Not Actually Put the Deal Through?—This Question Is Answered in a Careful Manner**

By "The Judge"

Real Estate Broker May Have Right to Commission Even Though He Does Not Actually Put Deal Through Its Final Stages.

Editor "Domestic Engineering":—If I ever get two real etstate brokers off my back, I swear that I shall never again try to buy or sell real estate through similar channels. Will you please tell me whether I shall have to pay two brokers a commission for doing the same work?

Not being satisfied with the price offered me for a piece of property through one broker, named Whittaker, although it was the price which I had set on the property, I placed the deal in the hands of another broker, called Glennen. After long weeks of dickering back and forth, Glennen finally sold the property to the very party, who had been secured by Whittaker and at the same price, as I finally decided to let it go at that figure, after all. This has been my first experience with real estate brokers, and I was surprised to find that Whittaker now claims that he has a right to the commission which I have already paid in part to Glennen. They are both pestering me daily and I want to settle the matter soon. What shall I do? M. F. D.

Answer:—Do not think for a minute that you are the only person ever mixed up with the claims and demands of real estate brokers. Like Job's boils, they have descended from generation to generation upon unsuspecting man to harass and bother him and try his patience to the limit of his powers. Probably no kind of cases cause more surprise, when an attorney states the law to a client, than those which involve commissions due real estate brokers. It is hard for the average business man, who never considers that he is entitled to compensation unless he has actually and finally put through a deal, to understand that there is a class of agents, who can successfully claim a commission, even though they have had nothing to do with the closing up of a deal. They fail to realize that the real estate brokerage business is of such long standing and there has been so much litigation on the subject, that the law has been well settled and in a way which differs from the usual run of business customs. If a business man tries to sell a certain brand of flour to a customer and later learns that the customer has bought the same number of barrels of the same brand at the same figure, he simply wonders what argument the other salesman used and pockets his loss of profits.

It is this line of reasoning, which gets a man into trouble when he is dealing with real estate brokers, for the law affecting real estate brokers' commissions on the face of it seems to be very, very different. This difference, however, is more fancied than real, and is due to the fact that the person wishing to sell or buy real estate seldom, if ever, really understands what he has asked the real estate broker to do. Such contracts of agency are not very often put in writing. If you had sought a written contract with Whittaker and had learned, by seeing in cold print, what Whittaker expected from you and had a right to expect because of long established customs, you would have acted differently.

Although you did not realize it, by placing your property for sale in Whittaker's hands, you agreed, in the absence of a different agreement, that if Whittaker should find you a customer, who would be ready, able and willing to buy at a figure, which you had set or agreed to sell at, he was entitled to a commission, even though he did nothing further about concluding the deal, and even though you finally changed your mind and did not sell the property at all.

If you will remember that this was in effect what you agreed to do, although you did not realize it, you will the better appreciate my explanation of the law.

The present situation is much like that of the stock exchange broker, who may execute a deal involving thousands of dollars on the change in time of panic or a tremendous bull market, and never more than crook his finger in a certain manner to make known the price he is selling or buying at. The courts would say, probably, that although he did not speak a word, he had promised to buy or sell at a certain figure, and that custom extending over a long period of years should prevail over the technical claim of his opponent that he had not in fact "named" a figure. In much the same way, the courts would find that by taking the steps which you did, in placing your property in Whittaker's hands for sale, you impliedly agreed to pay him, not to actually sell your property, but to find a customer, who would pay your price and who was ready and willing to do so.

Broadly speaking, if a broker introduces a customer to the owner of a house, and afterwards the owner and the purchaser come to terms and put the deal through, the broker is entitled to a commission. This is so, even if another broker enters into the transaction and actually assists in the final details of the deal. This is a broad statement of the law and might be qualified in some respects and under some circumstances. At the most, all a broker, under the above circumstances, would have to do would be to prove that he was the efficient cause which produced the result. The definition of that word "efficient" varies, as the facts vary in the different cases, but

*Every Effort is made to the End that these Answers may be authoritative. However, we cannot assume any Responsibility because of the very Nature of the Service, which is rendered without a personal Interview.—Editor.

it is a fact that the courts seem to favor the broker, who has been employed and then dropped, in arriving at a definition in any one case.

Where the owner of property employs a broker to bring him an offer for the purchase of it, without naming a price at which he is willing to sell—that is to say, where the owner of property employs a broker to bring him an offer, which he is to pass upon after it is brought to him—there can be no implied agreement or understanding that the broker is entitled to a reasonable time in which to procure an offer; in such a case the owner has a right to reject every offer brought to him. It is plain that under such circumstances the owner could decide not to accept any offer and to dismiss the broker altogether. But the right of an owner to put an end to a broker's employment is based upon a consideration, which goes deeper than that and includes the case where a price is named by the owner at which he is willing to sell his property. That consideration is the nature of a brokerage commission, and the very essence of a brokerage commission is that it is dependent upon success, and that it is in no way dependent upon, or affected by, the amount of work done by the broker. A brokerage commission is earned, if the broker without devoting much, if any, time or effort to hunting up a customer, succeeds in procuring one. It is equally true, on the other hand, not only that no commission is earned, if a broker is not successful, but that a broker is not entitled to any compensation, no matter how much time he has devoted to a customer, provided a customer is not found.

The promise to pay a brokerage commission, if a customer is found to purchase at a stated price, is not ordinary employment of labor, but is more in the nature of an offer, namely, an offer to pay a commission if a person is produced who will pay the price named. As in the case of any other offer, the owner may withdraw his offer at any time, no matter how much work the broker has done, if no customer has been found within the terms of the offer.

Whether or not, in your case, the broker Whittaker is entitled to a commission would depend upon the fact, whether he had accomplished his end of the deal in securing you a customer at your price, who was ready, willing and able to buy at that price.

One broker, who is unsuccessful in effecting a sale, does not become entitled to a commission upon the success of another. But where the purchaser is one, to whose attention the property was brought by the first broker, if the evidence also justifies the finding that his services were the efficient or effective means of bringing about the actual sale, and that his work in fact caused the purchaser to buy the property, such a finding entitles the broker to recover his compensation, because he has performed his contract, and in fact, procured a customer to purchase the estate. Where a broker does not have the exclusive sale of real estate, he does not entitle himself to a commission merely by showing that his efforts and services were one cause, among others, which contributed to bring about a sale, and but for them the sale would not have been made, but he must go further and show that his efforts and services were the effective or the predominating, efficient means of bringing about the sale.

So, where several brokers have each endeavored to bring about a sale, which is finally consummated, it may happen that each has contributed something without which the result would not have been reached. One may have found the customer who otherwise would not have been found, and yet the customer may have refused to conclude the bargain through his agency, and another broker may succeed where the first has failed. In such a case, in the absence of any express contract, that broker only is entitled to a commission, who can show that his services were the really effective means of bringing about the sale, or, to use the language of one text writer, "the predominating, efficient cause."

If, however, it is proved to the satisfaction of the court or jury that a sale would not have been made, unless the broker claiming a commission had done what he did, and that what he did was, at the time of the sale, the controlling cause of the sale, then the broker can recover. As was said by the court in your state, when commenting upon a decision by a lower court, which held that a broker's services need not be the sole cause, but that he might recover if he were one of the controlling causes of the sale:

"This rule (of the lower court) it seems to us, would allow two brokers to recover commissions upon the same sale. There might be another broker whose services were equally meritorious and essential in producing the result. But in such a case it is not enough to show that one of several causes stood in such a relation to the result, that without it the result would not have happened, and that it was one cause among others, which assisted or contributed in producing it. It becomes necessary to discriminate between the causes and to ascertain which one is the particular cause that can be called the efficient or effective one."

The making or not making of a contract between the seller and a customer who has been produced by a broker, or the enforcing of a contract after it has been made, are matters for the broker's principal to do or not to do, as his ability and inclination determine. They are matters with which the broker is not concerned, and on which his right to a commission do not depend.

It would seem, from the few facts, which you have given me, that Broker Whittaker has a valid claim for compensation for his services. There might be some loophole for you, if the offer of the customer, which Whittaker secured was in reality somewhat different from the terms of the actual sale. For instance, when Whittaker was handling the case, the customer may have demanded that you take back a mortgage in some amount, but was persuaded to change his mind when Glennen took up the case and paid you the entire purchase price. In such a case you would probably have a good defence to a law suit by Whittaker, because Whittaker had not secured a customer who really was ready, able and willing to pay your price, as intended and stated by you. There might well be other facts which you have not mentioned, which might let you out of your trouble.

On the other hand, if the deal went through substantially as Whittaker had planned, and he had secured a customer to carry it through, it would seem as if Whittaker were entitled to his commission, for it would probably be hard to prove that your customer, not having changed his offer in any respect, was persuaded to buy through Glennen's efforts as a controlling cause of the sale.

Sheridan, Mont.—William Flick has purchased Elmer E. Bickford's plumbing business in this city.

Don't forget that victory must be paid for. Keep your War Savings pledge, and invest at least 10 per cent of your December income in War Savings Stamps.

BIG MAIL ORDER HOUSE COLLIDES *with* FEDERAL TRADE COMMISSION

Octopus Among Mail Order Concerns, Which Retailers Have Fought for Years, is Called to Account by the Government

THE art of camouflage which is, it is alleged, applied to goods advertised in some mail order catalogues, has been dealt a jolt by Uncle Sam, through action taken by the Federal Trade Commission.

As the result of complaints made by retail grocery interests, the giant mail order concern—Sears, Roebuck & Co., of Chicago—has been ordered to "cease and desist" from certain alleged "false and misleading" advertisements, relative to teas and coffees, which the concern claimed was purchased direct and special from Japan or from the best plantations. Upon mature investigation, it developed that this mail order house purchased its teas and coffees—just as did other merchants—from importers in the United States. The concern has recently asked the Federal Court to review the findings of the Commission.

It is also alleged that Sears, Roebuck & Co. have treated home merchants unfairly in advertising in their catalogues that the retailer did not deal honestly and fairly with customers. It is further alleged that the firm advertised the sale of sugar cheaper than the retailer was selling it. Again upon investigation, it is alleged that the loss upon the sugar, sold by mail order, was made up on the increased price of other groceries.

For many years, plumbing contractors, at state and national conventions, have discussed and deplored the growing menace of the mail order business which has been cutting a large hole in the profits of country retailers of every kind from coast to coast.

Sears, Roebuck & Co., in their large catalogue, advertise a very extensive line of plumbing goods. On page 1597 we read:

"Easy to Install.

"Even if you have never done any plumbing, you will find it easy to install our fixtures, if you are at all handy, and will thus be able to save considerable. We send full directions for installing with our sinks and other fixtures, and thousands of our customers have installed their own plumbing with no other help than this."

The aforesaid advertisement is more or less misleading and is apt to bring house-owners in conflict with the local authorities, particularly in cities and municipalities where the plumbing regulations provide that plumbing systems must be installed by licensed plumbers. Even in communities where licenses are not required, plumbing inspection often prevails, and very few house-owners or laymen are qualified to install plumbing in a manner satisfactory to the local plumbing inspector.

The extent, to which the retailers have suffered by the encroachment of the mail order houses into legitimate home trade, may be conjectured when it is shown that Sears, Roebuck & Co. sold goods valued at $95,000,000 in 1913; in 1914, the sales reached $100,000,000; in 1915 the sales were $112,000,000; in 1916 a total of $145,000,000 was reached, and in 1917, the sales volume topped $176,000,000.

How much of this vast sales volume represented mail order plumbing goods is difficult to estimate, but it is said that about $2,000,000 worth of plumbing goods is sold annually by the concern.

The plumbing fraternity may rest assured, however, that the growing power of the mail order houses is a great factor in reducing profit in the plumbing business—profit from bathtubs, etc., which houseowners in the community should have purchased from you. The profit from the sale of that tub should have gone into the plumber's pocket instead of the coffers of an octopus mail order concern.

Ways and means of combating the competition of the mail order concerns, whose business is manifestly growing by leaps and bounds, is a timely subject—a subject which will merit serious discussion at the conventions of the plumbing trade during the winter months.

There is no question as to the menace of the mail order industry. The retailer in the plumbing business—the retailer in every other line of merchandising is living in fear of the day, when the whole realm of retailing will be monopolized by this industry, which is reaching out each year for still greater conquest in the selling field.

The mail order mania, which has seized a large percentage of the American public, is like a poison gas to the retailer, at once depressing, if not ruinous to his business prospects. When he sees it sweeping onward in his community, he puts on his gas mask and resolves to stand by his guns and fight the menace as best he can. He may survive as many do, but most of his profits will be captured by the advancing mail order catalogues, which repose in some households alongside of the family bible, and which furnish "wonderful" reading during the long winter evenings.

The Federal Trade Commission can render helpful assistance to the retail interests in regulating fair play in mail order advertising and selling methods, but retailers must not neglect to formulate ways and means of arousing public interest—just as the mail order houses have accomplished it.

Publicity has been the mighty force which has put the mail order interests "in right" with so many people in this country. The retailers in the plumbing industry, the retailers in every line must realize this fact, first and foremost. Publicity is the lever—the weapon—which the retailer must use and which he must perfect to a degree that will hold his selling lines more intact.

The mail order houses must be fought with their own weapons. Weeping over their victory in the selling field is of no avail. Denouncing them at conventions is futile, unless definite and systematic action is pursued.

"Home Industry" Slogan.

Prominent men in the retail world have suggested that a national campaign to encourage the patronizing of "Home Industry" would accomplish great results for the retailers in every line. The suggestion merits consideration. A committee representing retail organizations of every kind, and financed to launch a national advertising campaign to counter-attack the effects of the far-flung advertising of the mail order concerns, would manifestly prove of constructive value to the retail merchants throughout the country.

RAYMORE *and* COMPANY
PLUMBING *and* HEATING
SUPPLIES

The Story of a Master Plumber's Wife, Who Conducted Her Husband's Business With Success, While He Fought in France

By Daniel Louis Hanson, Author of "Moses Irons' Stories"

NATHANIEL RAYMORE was accustomed on occasions to follow the example of that wise caliph of old Bagdad, who strolled through his city by night, and to wander about the streets of his own Bagdad of the Subway, seeing what he could. So it was that the Boss found himself on that evening, when the Fourth Liberty Bond campaign was reaching its climax, far away from the Avenue with its miles of flags, pictures and statuary, down in Rivington Street, where humanity is packed tight, and where English speech is less frequent than foreign sentences.

And it was a plumbing shop that attracted his attention; first by the one-starred service flag that limped over the door, then by the lettered sign in the window.

"Every time the plumbing fixtures leak, you help the Kaiser that much." Right below it was another sign—this one in Yiddish, presumably a translation of the other. But Mr. Raymore wanted to make sure, so stepped down into the half basement and opened the door. As he did a bell jingled far back of the shop. Evidently this was another of those establishments he had denounced so frequently in his addresses to plumbers and jobbers alike: "Unsanitary joints posing as plumbing shops where sanitary goods are sold—scandalous impositions on the decent trade!" Something like that, for Mr. Raymore was not afraid of using hard words, when the occasion demanded.

* * *

He was right in his surmise; from far in the rear he heard footsteps, then a women pushed aside a ragged hanging and appeared before him.

"Something I do for you?" she asked. And Raymore saw he had to do with one of the daughters of Israel.

"I'll take one of those," and he pointed at some cheap filters lying in the window with a "25 Cents" price tag over them.

"They are ferry good!" said the woman, reaching out for one, "Lots of gentlemen buy two."

"I'll have two, of course." And Raymore laid down a silver half dollar on the dented counter.

"You have a son in the service?" and he pointed at the one-starred flag outside.

The woman, who was wrapping up his purchase in an old newspaper with cabalistic signs printed all over it, was amused. "I am only yet twenty eight and my son only seven. No, that's my man who is in France—now three months."

"And you run the shop?" Mr. Raymore was interested in the black-haired, thick-set woman behind the counter.

"No, I run Joseph and Joseph runs the shop. Then I watch the store and sells things to—to gentlemen like you."

"That sign—" and Raymore pointed to the window, "you did that; it is your idea, I suppose?"

She shrugged those thick shoulders, evidently she was a French Jewess, for from nowhere else comes such shrugs, as Raymore well knew. "I did it with stencil, Abe has a box of them. The idea—well one has to live, and that was in—in—" another gesture, which said plainer than words: "in the air."

Raymore gave a quick glance around him; he wanted to make talk and the only way to do so was to keep buying—that he saw. And she saw that he saw, which again amused her, but she kept quiet so as not to spoil a good thing.

Mr. Raymore, manufacturer and jobber of plumbing supplies, bought in succession, a dozen Fuller balls, two basin cocks—though at this she demurred, for visions of installation came to her, evidently. Then some hose bands and washes. "You have bought Liberty Bonds, I see—" and he indicated a placard till then hidden by the sign about leaky fixtures.

"Sure, they ain't risky, be they?" and she looked anxious for a fleeting moment.

"The most solid things in the world! The best investment in all the Universe!" the Boss hastened to say.

"Yet it has taken lots of talk to put it over. The Avenue has spent lots for flags and lights to tell folks that. We in Rivington Street see a good thing, then go in on it—see?" and the gesture again.

"Of course the spirit is a mighty fine thing, but we have to get the big amounts, too; and they take the music, lights and flags to start," and Mr. Raymore realized he was apologizing for his class.

She smiled at him again, that enigmatical smile: "How much you think I take?" she asked.

"I haven't any idea," replied the Boss.

"You think maybe one 'fifty' or two 'fifties'?" she laughed again, but scornfully this time, "I take five thousand!" and she stood as erect as her squat figure would permit.

"Five thousand!" Mr. Raymore was completely surprised and showed it. "Can you handle the—the payments?" for

he was thinking of the usual ten per cent advance deposit.

"Can I handle? Bah, you think I pay a few cents now and then some more next year? I pay cash—cash talks, doesn't it? Just cash, five thousand cash at the Bowery Bank, where we carry deposits, then there is some left yet."

Mr. Raymore was astonished—very much astonished. "You have made all that in this—in this shop?"

"Efery cent of it, mister, efery cent of it. Yet they say there ain't any money in the plumbing business! There is—and always will be, if one only works and keeps inside the fence in spending. My man is gone, and Joseph is one lazy journeyman. But I drive Joseph out on the

"That soldier of yours will get sore, when he comes home on furlough, and finds that the bath fixtures in his home aren't as good as at the camp. Get busy—or rather tell us to get busy."

These were some of the inspirational legends Mr. Raymore read on the walls. "You write those—that is make them up?" he asked.

"Why not?" she asked. "Ain't they common sense? And do we have to go up town and pay big money to learn common sense? Doesn't common sense come from hard knocks—and don't we get hard knocks down here?"

All of which appealed to the manufacturer. "And your husband—did he help, too?" he asked.

"My man, well, he is like lots of plumbers; he works

"How much you think I take?" she asked. "I haven't any idea," replied the Boss.

jobs, and I put up signs in the window, that sells stuff—that brings gentlemen in to ask questions and to buy—" Raymore felt sure that she meant him!—"and I make money, even though my man is over there in France."

It really was not much of a store—the shop must be that room clear to the back—but it was clean, had its small stock well arranged and tagged; and all around the walls were little legends in English and Yiddish—that first a concession, probably, to the fight being made against foreign text without an attendant translation.

"The meter works all the time the fixture leaks. And the meter ticks in money—Your Money."

"A bad water closet means a big doctor bill, and then sometimes the funeral director. We fix bad water closets."

"An enameled bath tub is better than a plush-lined coffin—and some cheaper, too. We sell bath tubs at low prices."

"Make your wife glad by the present of a new sink. We put in new sinks at very low prices."

hard with his hands, but his head—" and she shook her's sadly as she remembered his. "Now, I have hands, too—but only two. But my head—well, that has lots of thinking places—lots of them! So when my man went, I cleaned up the shop and dreamed out the signs, then got little Abe's box of stencils and made them in Yiddish. Then I got a friend to do them good in English—but down here it is the Yiddish that counts. And the signs they pull—they pulled you; they pull lots of folks, for people want to save nowadays—they have to—and this tells them how. My man makes ten thousand dollars in five years, but it took lots out of him. When his hands don't work the money doesn't come in. See!"

Mr. Raymore had heard that before, but it never had gotten under his skin till then; letting the business earn when the hands were at rest. He made a mental note to mention that to Harton on Monday.

"Now, I send Joseph out, and I make him report to me every job and how the rest of the plumbing looked. If he hasn't noticed, then I tell him what I think of him, and

next time he looks and remembers. Then I go and see the folks and talk with them. 'You need a new boiler.' I say to them and tell how much more it costs for them not to have a new one in time. Or, the closet is bad, and I show them how sickness comes—besides the shame of it—from having bad closets. I always follow up Joseph's work, and most times I get more work for him. If I could get another journeyman!"

"And the signs sell your stuff, do they?" asked the Boss.

"Sure—didn't they sell to you? Then they keep me going, too; when I feel like sitting down, then the signs punch me into action again. Do you ever have signs?" she demanded of Raymore.

"Yes—yes; I advertise in magazines and papers. Yes, I have signs."

"Well, don't they punch you up—give you a kick when you are just about to take it easy? Sure they do! Then when I read them, I think of others to print and that makes me think of other ways of getting business. It's just like that merry-go-round on Coney Island. One comes after the other, but it is all around one center pole."

"Where do you buy your goods?" asked Raymore, getting into a swing around the center pole, himself.

She mentioned an establishment down near the river front.

Nathaniel Raymore laid a card down on the dented counter. "I do a little at jobbing myself," he said, "and being nearer to you I should like to get some of your business, though that wasn't what I came in for."

She looked at the card. "I knew you," she said, "knew you the minute you came in; your picture has been in the trade papers. If your prices are right—for I have always done the buying, my man never did—I can give you some business. I discount," she added.

"Anything you are needing now?" for Raymore felt an ambition to do business.

"Some wash down bowls I need. What price?"

Possibly that was the only fixture, on which Mr. Raymore recalled price, but in the morning he and Mr. Harton had adjusted some claims with a transportation company for broken bowls, and the matter of selling price had come up. He now mentioned it.

She shook her tousled head. "I am quoted lower," she said.

"But we have the bowls!" he said. "A lower price doesn't help you, it's the goods you want."

"I'll come over Monday morning and look them over, if they are all right, maybe I buy fifty—that is, if the price is right," she added.

"Not fifty, madame! This is war! But we can let you have some. Tell me, what will your husband say, when he comes back and sees the signs on the wall and in the window—he so used to working with his hands?"

She laughed at that. "Maybe my man won't want to work so hard with his hands when he comes back. Maybe he gets lazy in the army. But ain't I a partner? Mustn't he do as I say? He sits around and waits for business, and then goes where he is called, whether it is a good job or not. I go after business, then from the lot I pick the best. I tell you, mister, we plumbers have just taken business crowded upon us, from now on, if we want to live, it is up to us to make business. Ain't I right? Don't you think?"

"Eternally so, madame!" exclaimed Mr. Raymore. "Up till now we have not even scratched the surface. From now on we will have to do some deep plowing, besides harrowing and cultivating. I hope you will ask for me personally on Monday, I should like to have the honor of showing you my establishment."

She thanked him, then said: "Don't you want to sell back to me that stuff? I give you fifty off what you paid."

"I do not, madame! These are souvenirs I am going to put on my desk where Mr. Harton, my sales manager, can see and profit by them. I look upon it as an honor to have met you, and I shall think of this as a wide-awake plumbing shop, doing business in both France and America."

F. P. Speth, Sr.

F. P. Speth, Sr., associated with his son in the plumbing business in Philadelphia for a number of years, died last week at his home on North Fifth Street in that city.

Charles F. Simms.

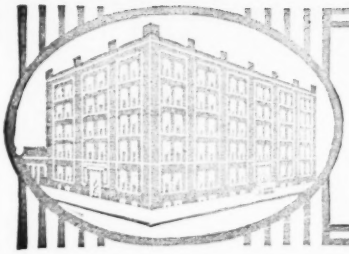
Charles F. Simms, manager of the Omaha office of the H. W. Johns-Manville Co., of New York City, died recently at his home in Omaha, according to announcement just issued by the company. Mr. Simms was manager of the Omaha office for many years, and he was associated with the company for nearly thirty years. No small part in the development of the company's western enterprises was attributed to him. His sterling character and his loyal, faithful and pleasing personality won him many friends and the respect of all who came in contact with him.

Charles Henry Tower.

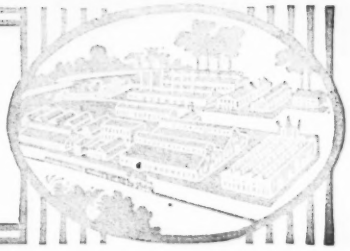
Charles Henry Tower, for many years engaged in the plumbing and stove business in Holyoke, Mass., died at his home in that city on Monday, November 18th, in his 90th year. He was a veteran of the Civil War and very prominent in his home city. Mr. Tower learned his trade in Pittsfield, Mass., and later lived for a time in Virginia. In 1865 he settled in Holyoke, and a few years later he and his brother, H. R. Tower, bought out the late D. B. Wing's plumbing business. In 1876 the brothers dissolved partnership, and the business was continued by Charles H. Tower alone until 1880 when he took the late Gustave A. Phelps into the firm. Mr. Phelps retired two years later and Mr. Tower again conducted the business alone until April, 1900, when he disposed of it to C. F. Sullivan & Co.

Captain Clarence J. Sodemann.

Clarence John Sodemann, a son of Chris W. Sodemann, of the Sodemann Heat & Power Co., St. Louis, Mo., was killed in the Argonne forest on September 29th, while leading his company against the Germans. Capt. Sodemann commanded Company L, 138th regiment, a St. Louis military unit. He was a graduate of Culver Military Institute, Indiana, and well known in the heating trade. His will was filed in the St. Louis Probate Court on November 25th. He left his $10,000 war insurance to his parents and his sister, Dorothy. He also willed his stock in the Sodemann company to his parents. He willed a gold saber, which was presented to him by his class on his graduation from Culver Institute, to a friend in Charleston, Mo. Capt. Sodemann was in his 25th year at the time of his death and he served with distinction in all the battles of the Vosges Mountains, in which his regiment participated.



Among the Wholesalers and Manufacturers



OPENS BRANCH OFFICE IN BUFFALO, N. Y.

The American Pressweld Radiator Corporation, of Detroit, Mich., has opened a branch office at Buffalo, N. Y., in charge of J. A. Sullivan.

NEW YORK OFFICE IN NEW LOCATION.

The Ohio Brass Co., of Mansfield, O., has moved its office in New York City from 30 Church Street, to 1781 Hudson Terminal Building, 50 Church Street.

BUILDING LARGE FACTORY ADDITIONS.

The McNab & Harlin Manufacturing Co., of Paterson, N. J., has started work on the construction of several additions to its factory. It is estimated that the improvements and additions will cost in the neighborhood of $250,000.

RAISING FUNDS FOR RESEARCH WORK.

The Research Bureau Committee of the American Society of Heating and Ventilating Engineers is now launched on its work of soliciting funds for the purpose of doing research work. A minimum of $10,000 is the goal. The following sub-committee of the New York Chapter has been appointed to handle the work in New York and vicinity: Arthur Ritter, chairman; F. T. Chapman, James A. Donnelly, G. G. Schmidt, C. E. Scott, B. K. Strader and C. E. Pearce.

TO START WORK ON LARGE ADDITION.

The Sanitary Company of America, of Linfield, Pa., has recently purchased a foundry in East Greenville, Pa., which is now being altered to suits its needs. The company is also making arrangements to break ground for an addition, 75x 128 ft. in dimensions. The new plant will be used for the manufacture of some of the company's plumbing specialties and it will be modernly equipped in every respect. It is planned to have this plant completed and in operation by March 1, 1918. The plant will be operated as a branch, and all the business of the concern will be transacted at its main offices in Linfield, Pa.

THE NOVEMBER MEETING OF THE NEW YORK CHAPTER OF A. S. H. & V. E.

The New York Chapter of the American Society of Heating and Ventilating Engineers held its regular monthly meeting at the Building Trades Club, on Monday evening, November 18th, and it proved a real get-together meeting.

After dinner, during the "Smoker period," an interesting collection of pictures were shown on the screen, illustrating how the American Army was made. These were presented through the courtesy of President P. H. Seward. W. J. Olvany, who has been connected with construction work at Camp Upton during the past six months, announced the titles and interpreted some of the work as depicted.

The technical program for the evening was M. Wm. Ehrlich's paper, "Engineering Economics of Heating." Mr. Ehrlich presented some interesting data based on actual practice in convincing detail. The subject was extensively discussed by the members.

The meeting committee was composed of M. W. Ehrlich chairman; W. H. Carrier, F. K. Chew, C. A. Fuller, O. E. Goldschmidt, C. Kiewitz, J. I. Lyle, F. G. McCann, G. W. Martin, A. K. Ohmes and R. W. Pryor.

DECEMBER MEETING OF THE ILLINOIS CHAPTER OF A. S. H. & V. E.

The Illinois Chapter of the American Society of Heating and Ventilating Engineers will hold its December meeting on Monday evening, December 9th, at the Chicago Engineers' Club, 314 South Federal Street, Chicago President F. R. Still, of Detroit, and other officers of the parent body will be guests of the Chapter. Following the usual dinner at 6:30 p. m., the evening will be devoted to a discussion on the Bureau of Research to be established by the Society at the Bureau of Mines in Pittsburgh, Pa. This work is to be carried on for the purpose of establishing basic standards for heating and ventilation. All members will be interested in this subject, and they are urged to make special efforts to attend the meeting. Members are also requested to bring guests who are eligible for membership, in view of the fact that the Society is making efforts to increase its list by securing 1,200 members by January 1st.

GOVERNMENT CONTRACTS TO BE AWARDED

Supervising Architect James A. Wetmore, of the Treasury Department, Washington, D. C., will receive sealed proposals for the construction, including plumbing and heating, of United States past offices, as follows: Until 3 p. m., January 3, 1919, for the construction of the United States post offices at Park City, Utah, Newburyport; Mass., and Mount Carmel, Ill.; also at 3 p. m., on January 6, 1919, for the construction of the post offices at Bakersfield, Cal., Lancaster, S. C., and Caribou, Maine; also at 3 p. m., on January 7, 1919, for the construction of the post offices at Woodbury, N. J., and Fremont, Ohio, and for the extension, remodeling, etc., of the post office and court house at Alexandria, La.; also, at 3 p. m., on January 8, 1919, for the construction of the post offices at Prescott, Ark., Cody, Wyo., and Waterloo, N. Y.; also at 3 p. m., on January 9, 1919 for the construction of the post offices at Orange, Tex., and State College, Pa., and the post office and court house at Durango, Col; also, at 3 p. m., on January 10, 1919, for the construction of the post offices at Front Royal, Va., and Vineland,

N. J.; also, at 3 p. m., on January 13, 1919, for the construction of the post office at West Point, Ga., the post office and Custom House at Fort Fairfield, Maine, and the post office and court house at Globe, Ariz.; also, at 3 p. m., on January 14, 1919, for the construction of the post offices at Southbridge, Mass., Cherokee, Iowa, and McKees Rocks, Pa.; also, at 3 p. m., on January 15, 1919, for the construction of the post offices at Long Island City, N. Y. Kenton, O., and Bellefourche, S. D.; also, at 3 p. m., on January 16, 1919, for the construction of the post offices at Winchester, Mass., Eldorado, Kans., and Shawnee, Okla.; also, at 3 p. m., on January 17, 1919, for the construction of the post offices at Franklin, Pa.; Cohoes, N. Y., and Buffalo, Wyo.; also, at 3 p. m., on January 20, 1919, for the construction of the post offices at Harrisonville, Mo.; Oswego, N. Y.; Decatur, Ala., and Sunbury, Pa. Drawings and specifications for the several buildings may be obtained from the custodian of the site in each city, or at the office of Supervising Architect Jas. A. Wetmore, Washington, D. C.

DEMAND FOR SANITARY PLUMBING FIXTURES IN CHINA.

A wave of popularity for things western is sweeping over the whole of China, and with a cessation of the war there may be expected to be huge demands for all sorts of foreign materials and especially foreign machinery, building materials, and equipments generally, reports United States Commercial Attaché Julean Arnold, of Shanghai, China.

One of the most noticeable developments in this direction at present is the growing demand for modern sanitary appliances. It is not intended to convey the idea to the American manufacturer that every one of the tens of millions of families in China is in the market for modern bath tubs and other sanitary appliances. As is generally known, the purchasing power of the masses in China is very low. The fact remains, however, that the number of well-to-do and wealthy Chinese is on the increase and these men are breaking away from the conservation of the past and are now taking a very favorable attitude toward things western.

Foreign communities in China are also demanding better sanitary equipments. Although Shanghai is a city of a million inhabitants and there are several thousand homes which under simiilar circumstances in the United States would have been equipped with modern heating installations, yet there are in this city probably not more than a half dozen homes in which heating plants are installed. Climatic conditions are such that heating plants are very well adapted to Shanghai needs.

A number of Chinese hotels are springing up in various parts of China and it will not be long before sanitary appliances will be needed in connection with the modern Chinese hotel. Shanghai City is contemplating the installation of a sewerage system, and as soon as this becomes an accomplished fact the demand for sanitary appliances and materials will naturally be a very large one.

TAX ANTICIPATION CERTIFICATES.

Aside from maintaining public order and the defense of life and property the most vital function of the Government is the provision of money, or an acceptable medium of payment and exchange.

The financial needs of the Government, in war and after that for the restoration of the peace footing, are very large. Heavy taxation is necessary and the problem of meeting the Federal taxes without affecting the equilibrium of money and credits vital to the welfare of the nation. To meet the condition of raising six billion dollars of taxes in 1919 the Government has decided on two policies: (1) Installment payment of the taxes on incomes and profits—the first installment falling due March 15th. (2) The issuance of tax anticipation certificates bearing 4½ per cent interest and maturing at the time the taxes must be paid. In effect the tax anticipation plan enables all who are liable for taxes to the treasury to rally their cash means in the interval between November 7, 1918, and March 15, 1919, and to invest that cash in a perfectly safe Government security, at a fair rate of interest, and in a form which will be accepted by the treasury in tax payments March 15, 1919. Under this plan it will be possible to avoid any disturbance of the money market and credit conditions at the incidence of the enormous tax payments next spring. The matter is thus summed up by R. G. Elliott, chairman, War Tax Advisory Committee, National Association of Credit Men: "We have been buying treasury certificates in anticipation of taxes ever since it became apparent that the amount of revenue produced by the 1917 act would be very large. War taxes are in the nature of a division of profits, with the Government in the position of a preferred stockholder who must be paid before there can be a distribution of profits to the owners; therefore, provision should be made to cover this tax liability, the money withdrawn monthly or quarterly and invested in liquid form during the year in which the profit is earned. The Credit Men's Association since the passage of the Excess Profits Tax Law has advocated the serial payment plan and the creation of reserves by tax payers; in other words, anticipating the payment by investment in certificates of indebtedness which will relieve the demand for credit at tax paying periods. These treasury certificates furnish a convenient form of income-producing reserve and investing in them during the taxable year to the extent of the tax liability, makes each year stand on its own bottom and will tend to defer the issue of bonds and permit an earlier reduction of war taxes for Governmental expenditures, bringing us closer to home in our financing by reducing expansion, thus creating a sounder and more stable credit condition."

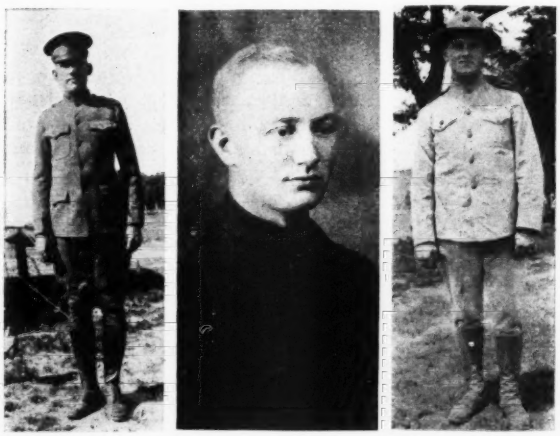
Paul Blatchford, secretary of the Central Supply Association, Chicago, attended the convention of the Chamber of Commerce of the United States at Atlantic City, N. J., December 4th to 7th.

Denny Berry, vice-president of the Alliance Brass Foundry Co., of Detroit, was in Chicago this week calling on some of his friends in the trade.

Thos. C. E. Hunter has joined the Hardware & Supply Co., of Akron, O., and will be in charge of the company's heating and steam specialty department.

S. E. Cole, architect's representative in the Middle West for H. W. Johns-Manville Co., of New York City, has just been appointed manager of this company's Omaha office to succeed the late Charles F. Simms. Mr. Cole has had a wide and varied experience in this company's service and is well fitted for the new duties which he is to assume.

Lieutenant E. C. Groener, Sergeant D. S. Warth and Private Arthur Anderson, all of the Sloan Valve Co., of Chicago, are expected home from service in the near future. Lieutenant Groener joined the colors in February, 1918, and is in active service at the front in France. He was manager of one of the company's departments before entering the army. Sergeant Warth joined the colors in April, 1918, and has been stationed at Camp Upton, N. Y.,



Lieutenant E. C. Groener, Sergeant D. S. Warth and Private Arthur Anderson.

training and equipping soldiers. Sergeant Warth is a member of the company's New York City sales staff. Private Anderson joined the navy in April, 1918, and suffered a fractured leg in going over the top. He is at present in a Marine hospital in France convalescing.

John J. Cahill, at one time sales manager of the Illinois Malleable Iron Co., Chicago, has recently opened an office as a manufacturers' agent at 160 North Wells Street, Chicago.

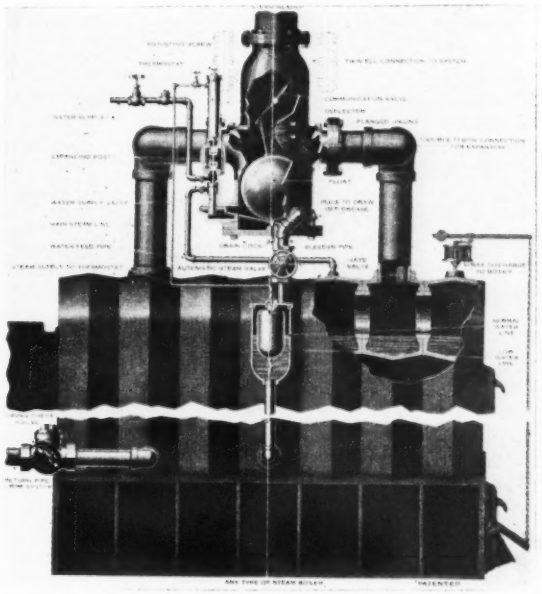
G. C. Christopher, sales representative of the Chicago branch of the Youngstown Sheet & Tube Co., Youngstown, O., has recently returned from a business trip through Northern Wisconsin where he found trade conditions promising.

M. T. Whitney, for many years connected with the sales organization of the H. Mueller Mfg. Co., of Decatur, Ill., has resigned to become secretary of the Illinois Plumbers' Specialty Co., of 160 North Wells Street, Chicago. Mr. Whitney prior to his connection with the Mueller concern, was associated with the Raymond Lead Co., of Chicago. The other officers of the Illinois Plumbers' Specialty Co., are Matt Dwyer, president, and Tom S. Dwyer, treasurer.

NEW APPLIANCES AND IMPROVEMENTS.

A New Controller for Steam and Vacuum Heating Systems.

A new controller, consisting of a steam header, grease separator, steam separator, bleeder, velocity reducer and emergency temperature reducer, has recently made its appearance on the market. This device, which is shown herewith in operation, is described as being adaptable to any type of steam boiler, high or low pressure, and to vacuum heating systems. By its use, the manufacturers state, it is possible to maintain a high boiler efficiency and yet be sure that the water will not leave the boiler due to priming. Its operation is described, in part as follows: "The pipes, connecting the controller, are full size of boiler tappings. Leaving the boiler, steam in passing through is forced downward, by deflectors, into a chamber reducing the velocity and separating the water from the steam. A bleeder pipe connects the controller to the bottom of the boiler. Only dry steam passes into the system above. The communication valve is set slightly off center and

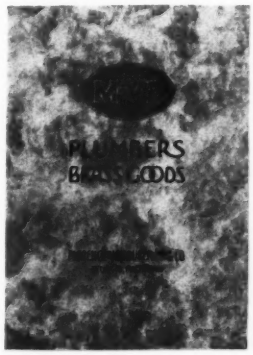


A New Controller for Heating Systems.

when in its open position it also serves as a deflector, but permits the steam to pass around and up into the system. When any slight priming or surging occurs, the water, by gravity, will fall in the controller chamber and be returned to the boiler by the bleeder pipe."

TRADE LITERATURE.

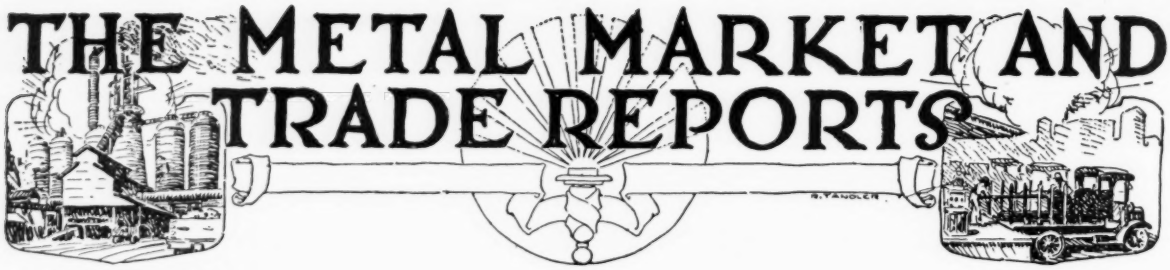
An exceptionally attractive catalogue has just been issued by the Morency-Van Buren Mfg. Co., of Sturgis, Mich., the front cover of which is shown, in miniature, in the accompanying cut. This catalogue illustrates and describes in minute detail the company's products, including elevated, submerged and high tank ball cocks, flush valves, valve seats, coupling nuts, spuds, levers, push buttons, combined wastes and overflows, etc. The catalogue is printed on highly glazed paper, and only high-grade half tone engravings have been used in its production. It consists of 56 pages, 5 by 7¼ inches in size.



Front Cover Design.

It cost considerable money to send our army to France, and it will cost just as much to bring it home—Make good your W. S. S. pledge.

THE METAL MARKET AND TRADE REPORTS



Steel and Iron.

During the next two weeks it is expected that important developments in the steel industry will transpire. The conference of producers with the War Industries Board is scheduled to take place at Washington on December 11th. They are to discuss the future of regulation and maximum prices. A meeting also is to be held in New York by the committee which has charge of the organization of the steel export combination under the Webb law, in which nearly all of the independents are interested. The readjustment of the industry from a war to a peace basis is going forward as satisfactorlly as could be expected from the standpoint of the trade, and it is believed that maximum prices will be abandoned by the beginning of the New Year. Cancellations by the Government are proceeding slowly, and it is the policy to terminate contracts with as little disturbance as possible. Export inquiry has made its appearance in large volume, covering a wide variety of products and coming from all quarters of the world, and while business has resulted, in the main the inquiry has not been met. Domestic demand has improved, jobbers buying with fair freedom and automobile manufacturers seeking to place orders for the supplies, which they will need in returning to normal production. Requirements of the Emergency Fleet Corporation continue to occupy the plate mills with the outlook that when these diminish, Japanese and other foreign buyers will be prepared to absorb the capacity released. Allocations by the War Industries Board ceased on November 30th and hereafter the various Government departments will place their orders independently, and priorities have also been abandoned, leaving maximum prices as the only restriction on the industry.

The approaching decision, as to the future of Government control of pig iron, is expected to stimulate the market. The principal inquiry during the last week has been for foundry iron for export, and domestic consumers are not particularly interested for the time being, at any rate. The tonnage desired for export is of considerable volume, but so far none has been placed, and it is not certain how much actual business will be done as a result. The attitude of producers in refusing cancellations is upheld by the War Industries Board, where bona fide contracts were concluded for iron allocated by the Government, which makes it probable that little of the tonnage booked will be cancelled, making the market strong. Production of coke is falling behind, as the influenza has broken out again, and many of the men are absent from the ovens. Prices are based upon shipment from Pittsburgh, Birmingham or Buffalo, the base price on No. 2 foundry iron being $34 f. o. b., furnace, and standard Bessemer at $35.20 f. o. b., furnace, subject to the following changes from previous delivery prices: (a) Pig iron produced in Virginia, Tennessee and Birmingham districts and south of the Potomac and Ohio Rivers, including St. Louis, Mo., but not furnaces bordering on the Ohio River, shall be sold on the basis of f. o. b., Birmingham. (b) Iron from furnaces located east of the Allegheny Mountains and north of the Potomac River will be sold on the basis of f. o. b., Pittsburgh. (c) Iron from all other producing districts shall be sold on basis f. o. b., furnace.

Copper.

The copper market is extremely dull. Producers are satisfied that the present prices are justified on the basis of costs and are confident that there can be no cut of any amount so long as labor and transportation are so high. And consumers are not ready to pay the price demanded, which is the maximum to remain in force until the end of the year. The consumers' attitude is strengthened by recent reports indicating that extension of price control is unlikely beyond January 1st. Producers believe that it is only a matter of time before inquiry will develop, covering large requirements that must be met. In the meantime they are discussing organization for export business and ways and means of adjusting the labor situation to a peace basis. Established prices are 26 cents a pound for carload lots and 27.30 cents for smaller amounts.

Tin.

Lack of buying of tin has been so accentuated of late that there is no tin market. Considerable metal is being offered for resale by consumers, who have larger stocks on hand than they can use, which produces a downward tendency. Quotations on spot are nominal at around 69 and 70 cents.

Lead.

The lead market has changed but little of late. Prices and distribution are under the control of the Lead Producers Committee, which control is expected to last to the end of the year and perhaps longer. The labor situation is improving in the producing districts and the output is expected to increase from now on. A reduction of $20 a ton was announced last Monday, making the price 7.05 cents a pound for New York delivery, and 6.75 cents at East St. Louis.

Spelter.

Prices for spelter have shown a firm trend during the last week with the outlook good for continued strength. A good demand from galvanizers developed, while supplies for prompt delivery are not very large. Prime Western New York delivery, spot was quoted at 8.65 and 8.75 cents and East St. Louis at 8.35 and 8.45 cents.

Other Metals.

Quotations on other metals in New York are as follows:

Aluminum (in 100-pound lots)	49 cents per lb
Antimony, Chinese and Japanese	16 cents per lb.
Solder, No. 1	49 cents per lb

New York Old Metal Market.

The following prices are current for old metals:

	Buying.	Selling.
Copper, heavy	21 to 22 cents	23 cents
Copper, light	19 to 20 cents	21 cents

Brass, heavy	11	to 11½ cents	12½ cents
Brass, light	9	to 10 cents	11 cents
Brass turning	11	to 11½ cents	12½ cents
Brass clippings	14	to 14½ cents	15¼ cents
Tea lead	5	to 5½ cents	6 cents
Aluminum clippings	28	to 29 cents	30 cents
Solder joints	13½	to 14 cents	15 cents
Scrap zinc	5½	to 6 cents	7 cents
New zinc clips	6¼	to 6½ cents	7 cents
Lead, heavy	6	to 6¼ cents	6½ cents
Cocks and faucets	15	to 15½ cents	16 cents
Mixed babbitt	8	to 8½ cents	9½ cents

Chicago Old Metal Market.

Chicago wholesale dealers' prices are nominally as follows:

	Buying.	Selling.
Heavy yellow brass	10½ to 11½ cents	12½ cents
Brass, light	8½ to 9½ cents	10½ cents
Brass, medium	9½ to 10½ cents	11½ cents
Brass clippings	12½ to 13 cents	14 cents
Red brass	16 to 17 cents	18 cents
Cocks and faucets	17 to 18 cents	19 cents
Copper, heavy	20 to 21 cents	22 cents
Lead, heavy	5½ to 5¾ cents	6½ cents
Tea lead	4½ to 5 cents	6 cents
Solder joints	13 to 13½ cents	14½ cents
Old iron pipe, per ton	$22.00	$23.00

The Pipe Market.

No changes were announced in the pipe market during the past week.

Quotations on less than car lots of full weight steel pipe remain as follows:

	Butt Weld Blk.	Butt Weld Galv.	Lap Weld Blk.	Lap Weld Galv.
⅛ to ⅜ inch	37	12	....	....
½ inch	40	27	....	....
¾ to 3 inch	43	31	....	....
2 inch	....	....	37	25
2½ to 6 inch	....	....	39	28
7 to 12 inch	....	....	37	25
12 to 14 inch	....	....	28	....
15 inch	....	....	25	....

The quotations apply to all shipments from stock, regardless of quantity.

On extra strong and double extra strong steel pipe in less than car lots, quotations are as follows:

	Extra Strong Plain Ends Butt Weld Blk.	Extra Strong Plain Ends Butt Weld Galv.	Extra Strong Plain Ends Lap Weld Blk.	Extra Strong Plain Ends Lap Weld Galv.	Double Extra Strong Plain Ends Butt Weld Blk.	Double Extra Strong Plain Ends Butt Weld Galv.	Double Extra Strong Plain Ends Lap Weld Blk.	Double Extra Strong Plain Ends Lap Weld Galv.
⅛, ¼ and ⅜ inch	33	17	....	....	....	....	....	....
½ inch	37	26	....	....	29	20	....	....
¾ to 1½ inch	41	30	....	....	32	23	....	....
2 to 2½ inch	42	31	....	....	34	25	....	....
3 inch	42	31	....	....	....	....	....	....
2 inch	....	....	35	25	....	....	27	19
2½ to 4 inch	....	....	37	27	....	....	29	21
4½ to 6 inch	....	....	36	26	....	....	28	20
7 to 8 inch	....	....	33	21	....	....	24	12
9 to 12 inch	....	....	28	16	....	....	....	....

With threads only, the basing discount is 1 and 1½ points lower. With threads and coupling the basing discount is 3 points lower. The quotations apply to all quantities less than car lots.

Quotations on full weight genuine iron pipe, in less than car lots, are as follows:

	Butt Weld Blk.	Butt Weld Galv.	Lap Weld Blk.	Lap Weld Galv.
⅛ and ¼ inch	14	+11	....	....
⅜ inch	15	+10	....	....
½ inch	19	2	....	....
1¼ inch	24	9	8	+7
¾ and 1 inch	24	9	....	....
1½ inch	24	9	16	3
2 inch	....	....	17	4
2½ to 6 inch	....	....	19	7
7 to 12 inch	....	....	16	4

These quotations are f. o. b. Pittsburgh, and apply to all shipments from stock, regardless of quantity.

On extra strong and double extra strong genuine wrought iron pipe, with plain ends, and in less than car lots, the quotations are as follows:

	Extra Strong Butt Weld Blk.	Extra Strong Butt Weld Galv.	Extra Strong Lap Weld Blk.	Extra Strong Lap Weld Galv.	Double Extra Strong Butt Weld Blk.	Double Extra Strong Butt Weld Galv.	Double Extra Strong Lap Weld Blk.	Double Extra Strong Lap Weld Galv.
⅛ to ⅜ inch	13	+ 3	....	....	....	....	....	....
½ inch	18	+ 6	....	....	6	+6	....	....
¾ and 1 inch	24	10	....	....	11	+1	....	....
1¼ inch	24	10	9	+6	11	+1	....	....
1½ inch	24	10	16	+3	11	+1	6	+6
2 inch	....	....	18	+6	....	....	6	+6
2½ to 4 inch	....	....	20	+9	....	....	8	+1
4½ to 6 inch	....	....	19	+8	....	....	7	+2
7 to 8 inch	....	....	11	List	....	....	....	....
9 to 12 inch	....	....	7	+5	....	....	....	....

These retail prices are f. o. b. Pittsburgh, and apply to all quantities except in car lots. With threads only, the basing discount is 1½ points lower. With threads and couplings, the basing discount is 3 points lower.

To ascertain the price in your city, deduct the proper less-than-carload freight rate from Pittsburgh to that city. Example: Base price on ¾-inch black steel pipe is 43 per cent, Pittsburgh, the less-than-carload rate to Patson is 17 cents, and the price, therefore, freight allowed to Patson, 41.3 per cent; on galvanized, 29.3 per cent. All other sizes to be figured on a comparative basis.

GERMANY LOSES FOUR-FIFTHS OF HER IRON ORE SUPPLY.

Writing from Zurich, Switzerland, in October, before the collapse of the Teutons, a correspondent of the "New York Evening Post," points out that in 1913 German furnaces consumed 37,830,000 tons of iron ore. Of the amount consumed, only 4,700,000 tons came from German mines, while 21,200,000 tons were extracted from mines situated in that part of Lorraine which Germany stole in 1871 from France. Nearly 12,000,000 tons were imported from abroad, among them 4,200,000 tons from Sweden, 3,700,000 tons from Spain, and 2,300,000 tons from France.

In other words, only 12.4 per cent of the iron ore used by the German furnaces came from Germany. But these figures, only reckoning the quantities of ore, are not sufficient to describe the importance of that which Germany took from France in 1871. The ore of the German mines contains on the average only 29.2 per cent iron, while that of the Lorraine district has 35 per cent iron. This percentage, reckoned upon the scale which is considered in the United States as normal, is very small. In the United States iron ores with less than 40 per cent are considered as having no profit.

The International Congress of Geologists, held at Stockholm in 1910, estimates the stock of iron ore in the part of Lorraine, taken by Germany from France and in Luxemburg at 1,974,000 tons. The other German districts have an estimated stock of 563,700,000 tons. In other words, four-fifths of the available iron ore in Germany is in that part of the country which lawfully belongs to France.

Before the war, France was unable to consume its own output of iron ore. The output of France in 1913 was 21,500,000 tons and her consumption only 13,200,000 tons. She exported 8,300,000 tons, of which half went to Germany. France has not enough coal, but Belgium has.

The alliance with Belgium, the country on the European continent which has comparatively most coal, has become very intimate, and the Belgian coal mines, which, after the war, must be reconstructed, will organize furnaces using French iron ore.

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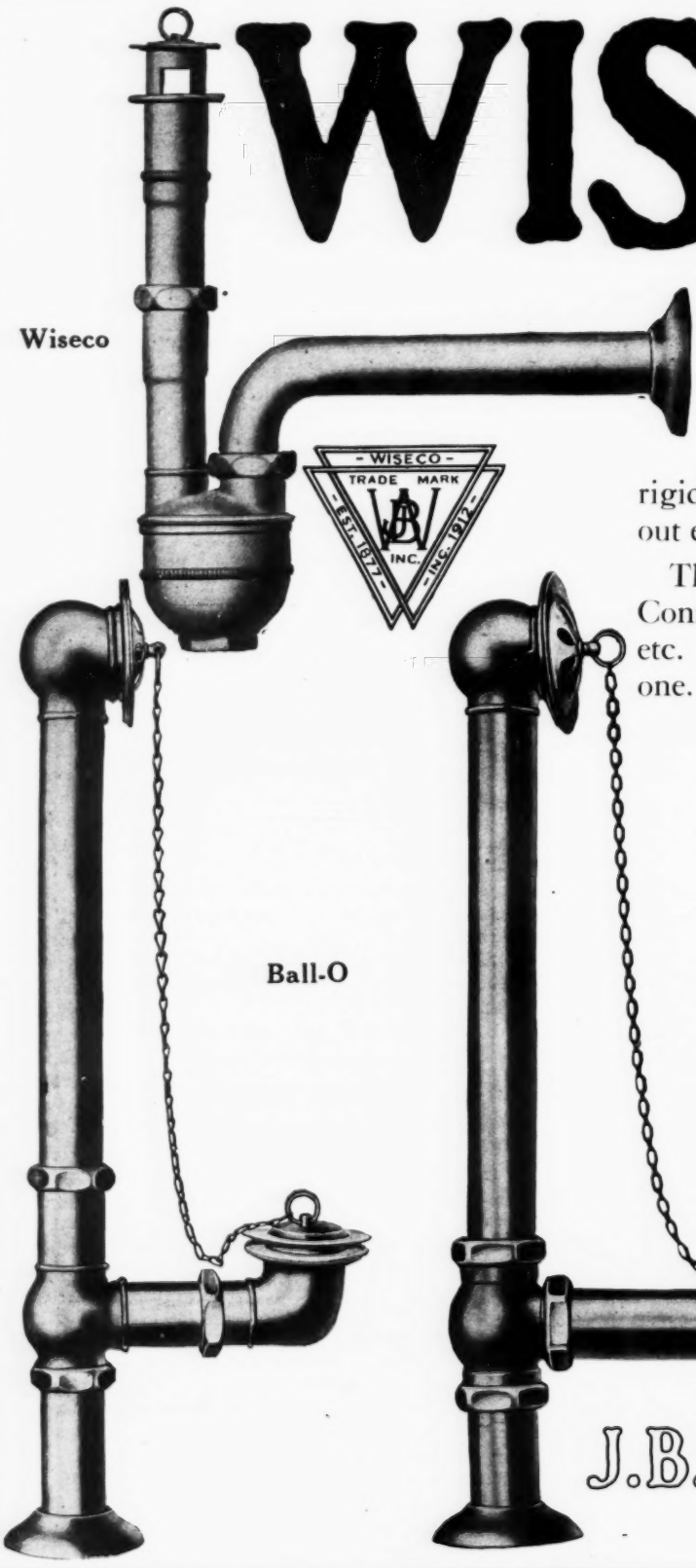

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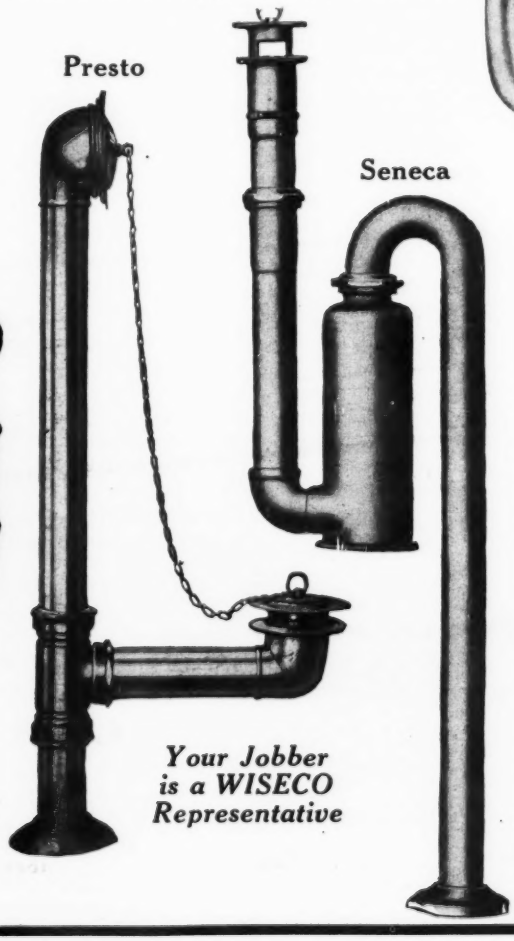

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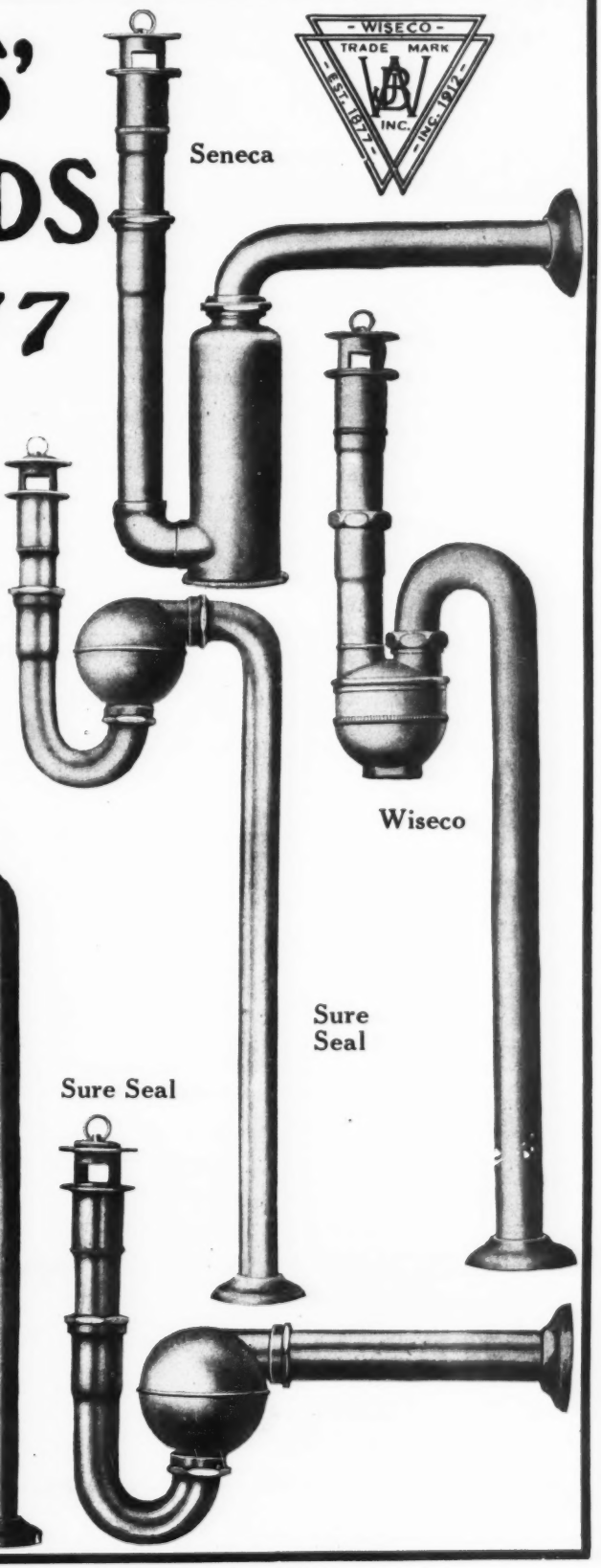

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AMONG THE PLUMBING AND HEATING CONTRACTORS

Illinois

Chicago and Vicinity.

The Board of Examiners of Plumbers has recently issued masters' certificates to Norman T. Jeffrey, of 8646 South Hamilton Street, and Samuel E. Brown, of 4934 St. Anthony Court, both having successfully passed the required examination.

The Roberts Plumbing Co., of 4544 North Western Avenue, has been awarded the contract for the installation of the plumbing system in a repair yard, to be built at a cost of $110,000, at Fifty-ninth Street and the Pennsylvania Railroad tracks.

H. P. Reger & Co., of 128 North LaSalle Street, will install the heating and ventilating systems in an auditorium to be erected on the grounds of the Muncipal Tuberculosis Hospital, at a cost of $100,000.

Charles Mundt, of 2202 Milwaukee Avenue, has secured the contract to remodel the plumbing system in an apartment building at 2818 Shakespeare Avenue.

P. Nacey Co., of 927 South State Street, will remodel the plumbing system in a store and office building to be altered at a cost of $65,000 at 171 North Michigan Avenue.

Melbye Bros., of 3129 North Clark Street, have been awarded the contract to install the plumbing system in a factory, to be built at a cost of $20,000, at 2034-2036 Clybourn Avenue.

John Hoffman, of 2969 Cottage Grove Avenue, will install the plumbing in a filling station on Jackson Boulevard, near Western Avenue.

Gallaher & Speck, of 215 West Congress Street, have been awarded the contract for the installation of the heating system in a motor truck repair shop to be built at 114-124 North Carpenter Street.

Frank Kveton, of 2241 South Fifty-ninth Street, will install the plumbing in an addition to a residence at 3125 Ridgeway Avenue.

Kostlevy & Co., of 814 West Eighteenth Street, have secured the contract to install plumbing systems in fifteen bungalows, to be erected at a cost of $5,000 each, on Fiftieth Court, between Nineteenth and Twenty-first Streets.

Wisconsin

The Wisconsin Master Plumbers' Association will hold its twenty-fifth annual convention on Tuesday, Wednesday and Thursday, January 14, 15 and 16, 1919, at the Hotel Wisconsin, Milwaukee, Wis., according to official call just issued by Secretary Charles Pelunek, of Milwaukee.

Baker-Niebuhr Co., of La Crosse, is installing modern plumbing and heating systems in the Y. W. C. A. Building, the new addition to the Telephone Co.'s Building, and the addition to the Grand View Hospital. The Company is also installing plumbing and heating in Albert Funk's house and in a new building on King Street.

Ohio

Akron and Vicinity.

R. O. Sponseller, of 996 East Market Street, has been awarded the contracts for the installation of plumbing in Chas. Krouse's bungalow and in the Mogaden Bank Building.

The H. P. Cahill Plumbing Co., of 14 and 16 South Canal Street, has been awarded the contracts for the installation of modern plumbing and heating systems in St. Vincent's High School, the Akron City Hospital, Northern Ohio Traction Light Terminal and Office Building, the Firestone Hotel, and the Y. W. C. A., all in Akron, and in the People's Saving & Loan Bank Building, in Worcester.

Buckeye Plumbing & Heating Co., of 45 East Market Street, has secured the contracts for the installation of plumbing and heating in the following building in Akron: Kirk County Bank, Botzum Block, M. C. Brill Block, the Knickerbocker Storage Building, and Buick Co. Garage.

H. P. Cahill, of the H. P. Cahill Plumbing Co., of this city, recently returned from an auto trip to California.

F. S. Prior, secretary and treasurer of the Akron Plumbing & Heating Co., has just returned from an extended business trip through Ohio and Michigan.

George Osburn, of the plumbing firm of George Osburn & Son, 36 South High Street, was recently honored with a surprise party by ten of his old friends in the plumbing trade, which took the form of a luncheon at the Elks Club in Akron.

Cleveland and Vicinity

Wm. Wilkens, of 6400 Broadway, is remodeling the plumbing in several residences.

Rudolph Kollin, of 8109 Woodland Avenue, has secured the contracts for remodeling the plumbing in two factories and six residences.

Some of the Cleveland Master Steam and Hot Water Fitters at their Outing in October.—From left to right they are:—Frank Daw, C. F. Diether, Frederick Winslow, William Bridges, James Miles, M. F. Rathers, M. S. Dougherty and Edward Maurer.

Indiana

Indianapolis and Vicinity.

The action of the War Industries Board removing all restrictions on non-war construction has brought about a gradual awakening of practically every line of business—including the plumbing and heating trades—identified with or related in any way to the building industry. Indications of a gradual revival of building work, especially the most urgent repair and remodeling work that has been at a standstill for the last two years because of war conditions, already are plentiful, and each day brings an increasing number of inquiries to plumbing and heating contractors for estimates of cost.

In analyzing existing conditions as a basis for making a forecast of future building activity in Indianapolis, one thing seems to stand out prominently. It is the probable price trend of plumbing and heating supplies and other building materials. In a general way no radical change of prices in supplies is expected very soon. Persons who have been holding off new building work, expecting at the close of the war to find a very sharp and immediate reduction in the cost of supplies and materials are going to be disappointed when they obtain their estimates, local tradesmen say.

While very little actual building is expected until the breaking of winter next March, local master plumbers and members of the heating trades have noticed a quickening in the demand for various kinds of repair work, due almost wholly to the removal of the government restrictions. Jobs which have been held in abeyance for almost two years now are being started, while in a number of instances property owners are going ahead in the perfection of plans for new buildings next spring and summer.

In one analysis of the new building situation, as outlined by C. M. McElwaine, of the plumbing and heating firm of Kirkhoff Bros. & McElwaine, of Indianapolis, in an interview in one of the local newspapers, the outlook is summed up as that of conservative optimism. While no building boom is expected during the first short period of readjustment to a peace basis, there are many reports of new work being projected which augurs well for active operations next spring and summer. "We probably will not notice any material improvement in business immediately, but there should be considerable activity in our line shortly," said Mr. McElwaine. "The building business, upon which a large part of our work is based, has been neglected for some time and will be one of the first after the general restraint to open up. There is little prospect of a decline in the price of lumber, nor is there any indication that labor will get any cheaper. Much of the material used in building operations is scarce and prices are comparatively high. This will continue and when people find there is no likelihood of a decline in prices, they will adjust themselves to that condition, and there will be considerable new building activity. If there was an overplus of material a different situation, of course, would prevail. But materials of nearly all kinds are scarce, and there will no doubt be a continued big demand because of the reconstruction work in Europe. The outlook is very good for a fine business for next year. After the people become adjusted to peace conditions and get their bearings, things will begin to hum. The labor problem—labor shortage—will adjust itself. There will be plenty of labor next year when the soldiers return."

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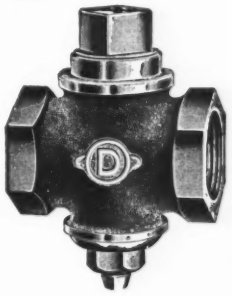

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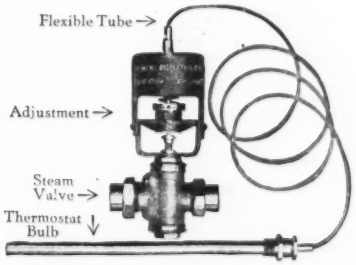

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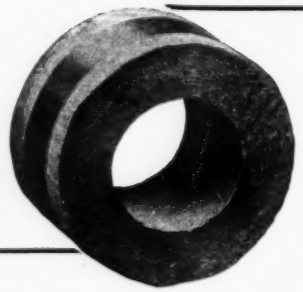

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NORRISTOWN, PA.

Other Cities in the State.

Members of the trade at Gary are looking forward to a substantial increase in business in the near future. The consensus of opinion is that the termination of the war means for Gary and other cities in the Calumet region a greater development in building operations than for any other city in the Hoosier state. Just when the activity along this line will begin is merely a matter of conjecture, but it appears to be the general opinion among many that building will be in full swing by next spring and summer.

The American Car & Foundry Co., which was ready to start construction of a new $10,000,000 plant at Gary before the war, is now reported to be planning to carry out the program. Construction work on the new plant probably will be started early in the new year, officials of the concern say.

Although all of Gary's steel mills and auxiliary industries have been directly affected by the war, due to the great amount of government work they were doing, there will be no cessation of the demand for labor as a result of the changed conditions, according to business men in touch with the situation. Readjustment of machinery in some of the factories has resulted in the laying off of a few hundred men, but these have been quickly absorbed by other plants.

Gary sent about 5,000 men to the war and contributed nearly $10,000,000 to help win it. These men will all receive jobs in the mills when they return, according to plans now being perfected. Hundreds of war workers from other cities have come to Gary to do war work, and it is the belief of those in touch with the situation that these men and all the returning soldiers can be provided with work. At the outbreak of the war Gary had a population of about 50,000. In less than two years this has increased to more than 70,000. This big increase, members of the trade say, is going to result in the erection of a large number of industrial homes for workers. Walter T. Dougan, building commissioner, says the number of homes contemplated at this time is very large. Perhaps the largest operation now in progress is that of the firm of Haas & Welch, which is erecting ten new homes on Pierce Street. The entire contract is valued at $46,000.

That practically all the leading industrial and business firms at Lafayette will welcome back to their forces the men, who left to enter the service of their country, and that the heads of these businesses are taking a decidedly optimistic attitude toward the business conditions following the coming of peace, are the conclusions drawn from an interview with G. B. Wallace, manager of the Wallace Brothers Plumbing Co., of that city. "We have seven men in the service, and all of them are to be taken back with the company," said Mr. Wallace. "We could use them now, and in no way displace the men who are now with us. We have been unable to secure enough men to do our work for us, and have been forced to refuse a considerable amount of highly desirable contracts on account of the lack of help. After the war materials will be more easily obtained, the demand for labor probably will be greater and business in nearly all lines will be better."

William A. Lesch, of 4508 Connecticut Street, Gary, has been awarded the contract for the installation of plumbing and heating systems in the John Kerr new $10,000 residence at 614 Lincoln Street. Mr. Lesch is also doing the following work: Installing plumbing in three bungalows for J. Wachter; plumbing and heating in the McCormack Building; plumbing in J. Zighey's two-flat build-

ing; plumbing in Chas. Plesineko's bungalow and in Thomas Houren's new residence. Mr. Lesch is also installing modern plumbing and heating systems in his own $10,000 residence.

Pennsylvania

Pittsburgh and Vicinity.

A vast amount of work will result, in the opinion of the crafts here, from a letter just sent out by the state board of public education urging school officials throughout the entire state to start all building possible in order that the seriously overcrowded conditions, which now prevail everywhere, may be relieved. A large number of public school buildings were headed off by the war restrictions, and all this work can now be advanced to completion. Special attention is called to the need for more sanitary quarters for the children of rural districts.

Joseph A. Weldon, president of the Master Plumbers' Association, left Thanksgiving evening for New York, from which port he intended to sail for France to take up war work with the Knights of Columbus. Mr. Weldon was the honor guest at a dinner-dance given him on Wednesday evening in the Hotel Chatham by the members of the association of which he is the head. F. J. Hanley, on behalf of the organization, presented Mr. Weldon with a handsome fourth-degree Knights of Columbus watch fob with diamond settings. F. J. Scheib, chairman of the entertainment committee, acted as toastmaster. Mr. Weldon will remain in France at least six months and may stay abroad until all the American boys have returned to this country.

The Builders' dinner and peace celebration on Thursday evening, December 19th, promises to eclipse anything ever held by this organization. The plans of the official entertainment committee have not been completed.

The University of Pittsburgh has been given permits to proceed with new building projects, one of them a two-story barracks to cost $14,000, another a one-story instruction shop to cost $10,000, and a two-room addition to the medical school to cost $8,000. These are merely one indication of the trend of business since the ban was lifted by the Government.

The Bureau of Building has observed a decided activity almost from the day the armistice was signed. The figures have not been compiled, but it is estimated by officials that the value of buildings, for which permits have been issued during that time, exceeds by at least 75 per cent that of a similar period preceding. In one day permits totaling $75,000 were issued. About $50,000 of this work is represented by three steel buildings on Longworth Street to be erected by Jones & Laughlin Steel Co.

Widespread attention has been given to a review of the building situation here by D. P. Black, president of the Real Estate Trust Co., in which he said among other things: "Proper housing for workers is going to come to the front in a most decided manner with the readjustment period. And it is not going to be the four-room boarded up-and-down shack of the past. The worker has been learning the comfort and the economy of living in a well-built home, with modern lighting, heating and ventilating systems and other economical improvements. And manufacturers have been getting their eyes open also. They have been erecting great factories, well housed. They have expended millions of dollars in providing plants to properly protect and care for their valuable machinery.

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By Heat Control

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The "MINNEAPOLIS" HEAT REGULATOR
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Entirely eliminates fuel waste by automatically operating the drafts, thereby maintaining an exact, even temperature throughout the day and likewise a definite lower temperature for the night.

An article of extremely satisfactory service—time tested, absolutely reliable and widely advertised.

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"THEY STAND THE STRAIN"

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"The Drop-Forging People"
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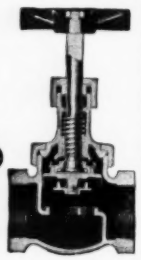
UNION BONNET
DOUBLE SEAT
VALVES



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NOW IS THE TIME FOR ALL THINGS
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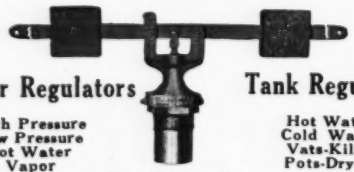

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Embodies a new and exclusive DOLE principle by which you can have every degree of opening required in vacuum or vapor steam heating.

This Adjustment is easily made while the steam is on.

Nothing like it on the market.

Furnished with the DOLE without extra cost.

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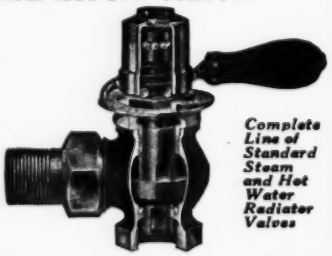

Complete Line of Standard Steam and Hot Water Radiator Valves

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And this advance is bound to continue to the benefit of all concerned."

Philadelphia and Vicinity.

B. Landau, of 1216 North Fourth Street, has been awarded the contract for the installation of plumbing in Guilford's new department store at 1510 Market Street.

John L. Gray, of Rosemont, has secured the contract for the installation of plumbing and heating systems in the residence of Dr. Sinkler, at Haverford. The contract amounts to $10,000.

George Taber, of Pottstown, has been awarded the contract for the installation of plumbing and heating systems in C. B. Shoemaker's residence, in that city.

W. A. Heckman will install a modern plumbing system in the church being erected in Reading for the Perkwinen Presbyterian congregation.

George W. England Estate, of 235 South Fifth Street, has secured the contract for the installation of modern plumbing in a residence being erected in Chestnut Hill.

A. B. Hunt & Co., of Williamsport, have been awarded the contract for the installation of modern plumbing in the building being erected in Williamsport for the Loyal Order of Moose.

Massachusetts

Boston and Vicinity.

Members of the Massachusetts North Shore Association of Master Plumbers have voted to re-employ all men who left them to enter army or navy service in the war. The North Shore association is the first, in this section at least, to take this patriotic stand. It will be no small problem to place the men, for there are between 75 and 100 journeymen and helpers who have gone forth from the North Shore district. Each member of the association is to furnish Secretary Trow with a list of his former employes in the service, which will be entered on the roll of honor, and as these men come back, their former employer, or if he is not in a position to take them, some other member of the association will give them work. Men who have seen foreign service will be given first preference. Men who left their employers to enjoy the high wages at shipyards and cantonments, many of whom already are coming back, will not be considered as having been in the service, and will be taken on, if needed, with the understanding that returning soldiers have first claim on the places.

The monthly meeting of the executive board of the Massachusetts State Association of Master Plumbers was held at the Boston City Club, on Tuesday, November 21st, and many association matters were discussed, including the question of obtaining help in view of the recent increase in the pay of plumbers working in shipyards.

John J. Mullen, an Everett master plumber, who served as mayor of Everett in 1917, and was defeated for re-election, has announced that he will be a candidate for the office again next month.

Representatives of about fifty New England gas companies attended the monthly dinner of the Gas Sales Association, held at the Boston City Club, on Thursday evening, November 21st. William Gould, of Boston, governor of the association, was toastmaster, and an address on war topics was given by William R. Balch, of the "Boston Transcript."

Sub-contracts for a new business building being erected at Attleboro for the Sanford heirs, recently have been let.

The heating contract went to the Haslam Heating & Ventilating Co., of Providence, and the plumbing to the Frank Dupuis Co., of Pawtucket, R. I. The plumbing contract calls for the furnishing of nine toilet rooms and the installation of numerous fixtures.

Plans for the formation of a master plumbers' association to include Malden, Medford, Everett, Melrose, Stoneham, Winchester, Reading and Wakefield—cities and towns within a few miles of Boston—were discussed at a meeting held in Malden on Thursday evening, November 21st. At present there is an association composed of master plumbers in Medford, Malden and Everett, but the masters in the other communities named are without an organization, a former association, known as the South Middlesex Master Plumbers' Association, with which many of them were affliated, having been dissolved some time ago. Thomas Garvey, of Everett, president of the Medford, Malden and Everett Association, presided at the meeting, and master plumbers were present from all of the cities and towns which it is proposed to include in the new organization. It was decided to hold another meeting later, at a date to be announced by Mr. Garvey, at which the organization will be perfected. The delegates favored calling the new association the North Suburban Association, and this name probably will be adopted later.

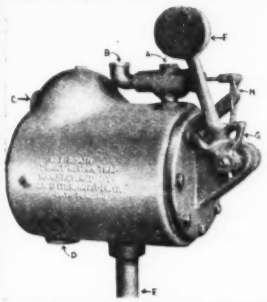
Missouri

St. Louis and Vicinity.

W B. Ittner, school architect, forecasts a big boom in school construction all over the country next year. He says that Dallas, Tex., will be in the market for $500,000 worth of new school buildings, as soon as the city can float a bond issue. Birmingham, Ala., also plans to spend $2,000,000 in new school buildings, as soon as a bond issue is sold. Mr. Ittner expects to resume work shortly on a job involving $1,000,000, covering new additions to the Greeley, Colo., and Denison, Colo., agricultural schools. Mr. Ittner is in charge of constructing $1,500,000 worth of school buildings for Erie, Pa., and he also has a big job for the government at Hampton Roads, Va.

The Sodemann Heat & Power Co. is busy with out-of-town work, as well as St. Louis jobs. This concern is installing the heating system in the new Jane Building at Eighth and Olive Street; it also has the contract for installing the heating and ventilating systems in the new East Side High School at Cincinnati. This job involves an outlay of $140,000, approximately. The Sodemann Company also will install the heating and ventilating systems in the new University of Nebraska buildings at Lincoln at a cost of $12,000; the United States penitentiary $20,000 job at Atlanta, Ga., and it has two big contracts at Urbana, Ill., one a state university and the other the Smith Memorial building, both jobs amounting to something like $15,000.

McDonnell Plumbing Co. installed the plumbing in the new $250,000 Poro College Building, which was designed by A. B. Groves, architect. The building has just been completed and turned over to the Poro College Co., of which A. E. Malone is the president. The structure contains three stories and a mezzanine floor. Hoffman Heating Co. executed the heating contract. The building contains a factory and general offices for the Poro Company, 31 booths, four stores and an auditorium which will seat 500 people. It also contains 35 offices equipped for doctors and 95 dormitory rooms.



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Low Pressure Direct Return Trap

For all types of

Steam Heating Systems

Eliminates Air, Promotes Circulation, Saves Fuel

Write for full information

Manufactured by

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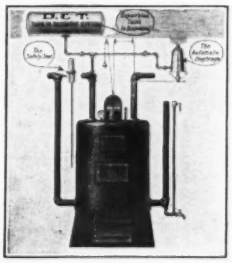
Originators of This Style Trap

D & T Tank-in-Basement System

Saves 25% on Coal Bills



It is the most economical and efficient method of Hot Water Heating known. It will save your client money on the purchase of equipment, the installation and up-keep.

Over 35,000 D. & T. systems now in use.

Write for Booklet "Progress in Hot Water Heating."

D & T Manufacturing Co.

1907-09 Pine Street

St. Louis, Mo.

Dependable Showers

Easily set for desired temperature.

The Milwaukee Mixer

precludes all danger of scalding.

Made in a variety of designs.

Valve either exposed or concealed.

China or metal handle.

Order from your jobber.

The Milwaukee Flush Valve Co.

Valve Specialists MILWAUKEE, WIS.

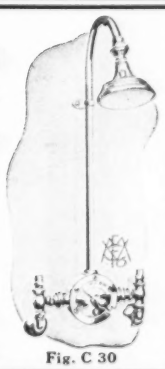
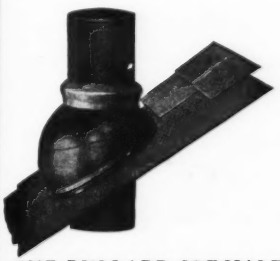


Fig. C 30

NO ROOF IS SUPERIOR TO ITS FLANGE



Therefore, some PLUMBER is the father of every leaky roof.

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is acknowledged as the only PERFECT FLANGE by busy men who have made satisfying installations.

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Eagle All Lead Roof Flange

LEAD PIPE
Length, 6 inches
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Made in Angles, 45 deg., 22½ deg. and Straight.

SIZE OF APRON
15 inches Square

No Caulking To Be Done
Joints Lead-burned — No Solder Used
Flexible Adjustable Economical
Write for Circular and Prices.

Manufactured only by

The Eagle-Picher Lead Co.
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HAYNES SELLING COMPANY

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Modulated and Vacuum Heating Systems Adapted for all Types of Buildings

Over 25 Years' Experience

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We say the CLEAN SWEEP TRAPS are the most Satisfying.
ANTI SYPHON TRAPS the best for durability, the quality unquestioned.

The Appearance exceptional and the Service sure.
They meet up with all the iron clad arguments for good work.
Fit anything—anywhere—anyhow.
Homes—Offices—Factories.
Made Safe, Sane and Sanitary.
In Lead and Brass.

Detroit Sanitary Supply Co.
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2d Ave. & Antoinette St. DETROIT, MICH.

NIEDECKEN MIXER

For
Shower
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Bath
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Etc.

Write for Bulletin D-10-X

HOFFMANN & BILLINGS MFG. CO.
MILWAUKEE

California

San Francisco and Vicinity.

Like other trades linked up with the iron and steel lines, the plumbing and heating business is marking time to a large extent. The changes brought about by the cessation of hostilities in Europe and the subsequent cancellation of many Government orders and orders dependent on Government activities, together with the removal of all restrictions and regulations, have so far caused no serious disturbance in the plumbing, heating or ventilating trades. Everybody in these trades has joined the waiting class, though it must be admitted that the feeling is very optimistic. A very large amount of building has been held up during the war, and the demand for more business buildings, hotels and dwellings is very keen. Also, there is plenty of money in the state; all that is wanting is to get back into peace channels and the move will gain a little confidence and a little momentum.

A lot of activity is looked for in all tubular goods soon after the first of the year. Already jobbers are ordering more freely than in recent months, though these orders are generally pretty well gauged to meet the requirements in sight. Naturally, the demand is now coming from a different quarter than in war times, but the general feeling is that there will be no falling off; and that, as soon as peace building really begins, there will be a decided increase. A number of bond issues for water works purposes have already been voted, and the cash on these should begin to be available early in the new year.

The local trade takes the view that the lifting of all building restrictions will result in an almost immediate improvement in the building situation. The most important structure which will be started as a result of the removal of restraints will be the State of California Building in the Civic Center. For this the money is already on hand, and the plans have been accepted. All that remains is to call for bids and begin work. Several large warehouses in San Francisco and on the other side of the bay will probably be the first large structures to go up under the new conditions, and a considerable number of residences will be started nearly as soon.

New York

New York City and Vicinity.

The master plumbers of New York City were again on the job doing their bit during the recent United War Fund drive. Herbert Smith was chairman of activities in Manhattan, and the efficient committee, that put over the last Liberty Loan, was again in action. The committee was active during the whole drive, and in Manhattan and Bronx Boroughs, alone, a total of $5,000 was secured for the cause. This committee, which has so often shown its worth in the recent war activities, will also be in charge of the coming Red Cross drive, from December 16th to 23rd. Preparations for the campaign are now under way, and the association will be out to exceed its contribution of $5,700 collected during the last Red Cross week.

M. J. Kennedy, the active public official and member of the Brooklyn Master Plumbers' Association, is well and on deck again. Fortunately Mr. Kennedy's illness did not develop further than to a heavy cold, and his associates are glad to see him again on the job.

The DAY BOOK *of the* BON TON DE LUX PLUMBING & HEATING CO.

Jerry Dolan's Record of the Interesting Happenings of the Day

(Continued from Page 331 in the November 30th Issue.)

November 29, 1918.

Just got a letter from Old Man Flannigan's bookkeeper. He went over to France with the "Y" and was supposed to be doing construction work behind the lines, but it got too tame for him, and he went over the top with a bag of chocolates over one shoulder and a bag of cigarettes over the other, and a Hun machine gun bullet nicked him in the knee. He's in the hospital now, and writes that he will be shipped home, as soon as he is fit to travel, and expects to be here by Christmas, at the very latest. Gee, but Old Man Flannigan will be glad. He also writes that he lost his heart in France, and, as he can't very well get along without it, he is bringing the captor back with him. What do you know about that?

November 30, 1918.

We put in a line of Air Moisteners the early part of the month and by showing them in the store and telling people about them on the job, we have sold sixty of them already. The profit is not so very large, but these sales are usually for cash, and if we can sell enough of that stuff, we can pay the rent with the profits, and that's what helps to keep down the overhead.

December 1, 1918.

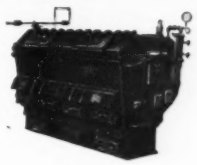
A nice, quiet Sunday, not even a broken coil to spoil the day.

December 2, 1918.

It's no wonder that the plumber is always being blamed for not bringing his tools with him. We got a call yesterday from an old friend, and he says that there is something the matter with the plumbing in a house that he owns, and he wants a plumber in a hurry to get things fixed up. I asked him, if he knew what was out of order, but he knew less about it than Jess Willard does about flying, and so I sent a plumber down there with the usual repair outfit and a sink wire and a closet auger, and pretty soon he phones back that he has everything he needs except a trench pump, two pairs of boots and three or four laborers. There was nothing at all the matter with the plumbing in the house, but there was a break in the service pipe about 150 feet from the house. We phoned over to the Sanitor Co., and they got busy on the job and cleaned it up.

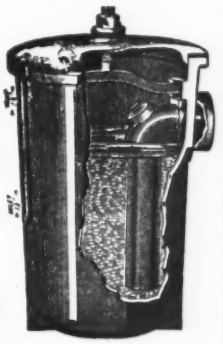
December 3, 1918.

Some people have some peculiar ideas about bills. Way last spring, when we were young and green at the business, we got an order to do a little job and we did it all O. K., and sent in the bill and a couple of statements, but there was no come back. I stopped there a couple of times, and they promised to pay. The bill was too small to give to the collector, and so we just naturally waited. This morning in comes a little lad with the original bill, the money and a story to the effect that it had been overlooked, and a few minutes afterwards his mother phones in to say that there is a broken pipe in the basement and to please come over and fix it right away. It looks as if that broken pipe must have jogged her memory. I told her that we would send over and that all repair work was being done on a C. O. D. basis, and she said that would be all right, too. Hank went over and installed a compression stop and waste valve on the sill

ECONOMY  EFFICIENCY

This is a
Pierce Down Draft, Magazine Feed, Smoke Consuming, Heating Boiler
Saves Fuel Labor
Manufactured only by
PIERCE, BUTLER & PIERCE MANUFACTURING CORP.
Brooklyn Boston Worcester NEW YORK Syracuse Philadelphia Baltimore Washington

The Boston Grease Trap



is pronounced the most efficient trap on the market, wherever it is in use.
Separates all grease from waste water and retains it so that pipes will not become clogged.
Special clean-out feature. Handhole is extra large, making it easy to remove grease.
Price within reach of all.
Write for details.

R. Estabrook's Sons
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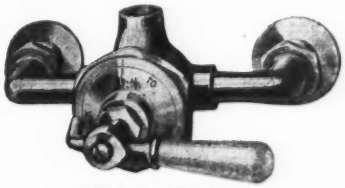
ROYAL
Mixing Valve for Showers
Simple in Operation—Few Working Parts.



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Building Bigger Business
Install **"SANIDOME"**
Bibbs, Bath and Basin Cocks
Your Customer Will Pay More and Make More Profit For You
Write for information
THE HAYDENVILLE COMPANY
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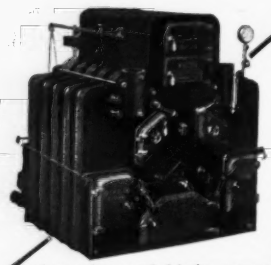

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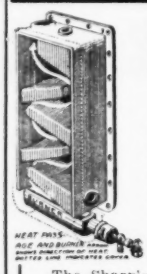
The Magazine Feed Boiler with the Adjustable Throat

The Patriotic Boiler

This year home owners will be forced to take various sizes and kinds of fuel—pea and buckwheat along with chestnut, range and egg. Also non-caking nut soft coal. The Newport is the only boiler which burns efficiently all these sizes and kinds—separately or mixed. Thus your customers are safe, for unusual fuel conditions are overcome. Send for "Newport Heating" document.

Newport Boiler Company
107 South Dearborn Street Chicago



Sharp's Cleanout Water Heater Means Satisfied Customers

True satisfaction in an article will bring a customer back to your store again and again. Your profits lie in selling that kind. The Sharp's Cleanout Water Heater is that kind. Its points of advantage over the ordinary type of heater are at once apparent to the prospective buyer, and sales can be quickly made. Here are the things to emphasize: no coils, easy to clean, gas bills small, gives a lifetime of service.

The Sharp's Heater will prove a valuable addition to your stock. Wire us at once for complete information.

General Manufacturing Co. Heater Dept. 67 19th St., Wheeling, W. Va.

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Some of the most prominent contractors who have been using our bench for the last five years have recently given us several individual re-orders for over 100 benches.

Don't hesitate to drop us a line and we will send you the names and addresses of hundreds of satisfied users.

STANDARD IRON WORKS, Inc.
508-10 E. 74th Street, New York City

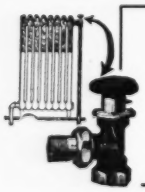
"HAAS" WATER CLOSETS
are high grade, insuring maximum service and minimum expense
PHILIP HAAS CO., DAYTON, OHIO

Pressweld Radiators
Save 15% on Fuel

It is your patriotic duty to install them. They are light, compact, quick-heating and save space. Can be hung on wall.

Used by U. S. Government. Write for new catalog.

American Pressweld Radiator Corp., Detroit, Mich.



The Heating System you specify should be

ADSCO HEATING

Atmospheric System, Steam or Vapor Heat.

Write for Bulletin 133-E

AMERICAN DISTRICT STEAM COMPANY

General Offices and Works: No. Tonawanda, N. Y.
Branches: New York, Chicago, Seattle.

run, in place of the old ground key stop, which was making all the trouble, and she paid him as soon as he was through. Those "Cash Sale" entries on the left-hand side of the cash book are the ones that I like to make.

December 4, 1918.

We're keeping busy with repairs, and every day now we get a few nibbles that make it look as if the building season was going to get an early start. We had one call the other day that was a dandy. A fellow wanted an estimate on a house job, and I went out and looked it over with him. The next day he dropped in to find out what our bid would be, I told him and he thanked me and said that a friend of his had figured it, and his bid was five dollars higher than ours, and he had thought that his friend was holding him up, so he was checking him up a little before giving him the job.

December 5, 1918.

One of our plumbers met another one of those "master plumbers" the other day. One of our customers called up and gave me fits, because some faucets that we had installed in her flat building were of such peculiar construction that they could not be repaired. I told her that she must be mistaken, as we had used Fuller Pattern Bibbs made by the best brass manufacturing concern in the world, and we had it back and forth for a few minutes, until it ended by her asking me to send over a plumber and see what could be done. One of the boys went over, and he found that some of the bibbs were leaking, and others were packed so tight that no water could be gotten through them, no matter how the handle was turned. He shut off the water and took one of the bibbs apart, and then he called the owner and told her that he had taken one bibb apart and wanted her on hand, when he took the next one apart. The Fuller balls had been put in backwards, furthermore, they were the kind that you can buy at the nickel and dime stores. They look like rubber, if you do not look at them very closely, and they wear like pasteboard. The plumber told her that this was the trouble, and then he put in a couple of good balls of real rubber with new brass caps back of them, put the bibbs together, turned on the water, and they worked like a million dollars. While the plumber was fixing the rest of the bibbs, the old lady went on a still hunt for the janitor, who had been doing the repairing, and the plumber overheard his reply, after he had been told that he knew nothing about plumbing. "Why," he said, "let me tell you that I am a master plumber and have had as many as fifteen men working under me." From the looks of those bibbs, he must have been a roofer or a shingle artist to have had anyone working under him.

December 6, 1918.

The word "Master" is not the proper word to use in connection with employing plumbers, and, for want of better term, the phrase "Contracting and Merchant Plumber" should be used by the trade. That is what I think.

(To be Continued.)

Uncle Joe Cannon tells of a conversation overheard in his home town in Illinois.

"Was the wedding a success?"

"Yes, in most particulars; but some of the guests thought the bride's mother did a lot more crying than was necessary. You see, the young couple are to make their home with her, so she really isn't losing her daughter."

"Maybe that was what she was crying about."—"Pittsburgh Chronicle-Telegraph."

CONCRETE SEPTIC TANK AND SUBSOIL DISPOSAL FIELDS FOR COUNTRY HOMES.

(Continued from Page 365.)

disposal pipes as in Fig. 4. Here we have 4 inches of filling under the pipes, 4 inches above them, and the spaces on both sides well packed. In fact, half of the trenches is filled in around the pipes with the loose material. The top half, however, is filled with the original top dirt. This aerates the drainage bed in a practical way, and affords a maximum surface for percolating purposes. Both sides of trench, 1 foot deep, as well as the bottom, can be used for percolating or seepage of the sewage.

In cases where two disposal fields are advisable, and that is on nearly every sewerage job of any considerable magnitude, a switching box, something similar to Fig. 5, may be used. The upper portion is a vertial section through the box. The lower portion is a plan view.

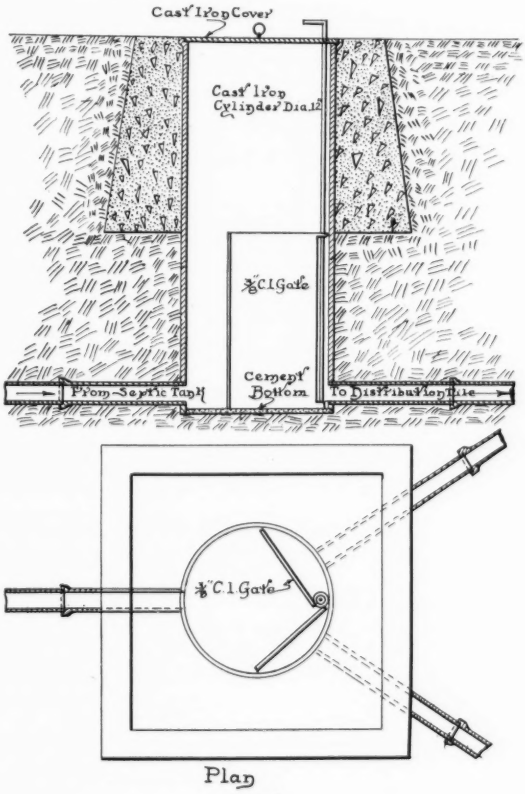


Fig. 5.

A cylinder of cast iron or earthen sewer pipe may be used to form the manhole proper. The bottom is cement. The pipe from septic tank discharges into manhole. Two pipes from manhole run to the two disposal fields. A swinging gate, hinged between the inlets to these disposal field pipes, can be swung one way or the other to divert the sewage water into either field. Thus one field may be used say a month or two, then it is shut off, and the other field put in service. This gives the fields long resting periods which have been found very beneficial for their self-purification.

All jobs of importance should have two fields, a switch gate, and an automatic siphon. This is considered good sanitary engineering practice, which plumbers can easily carry out to good advantage.

"Femco" Fittings
Goods that make good — Quality first, last and always
We make a complete line of Plumbers' Brass Supplies for all requirements. Write for prices.
Frost Manufacturing Co. Kenosha, Wis.

Suction Pumps and Complete Water Supply Systems
Electric House Pumps · Dayton · Water Supply Systems
pumping capacities 120 to 1,000 gallons per hour. Efficient Deep Well Pumps with Hyatt Roller Bearings and silent chain drive, pumping capacities 150 to 2,000 gallons per hour. Write for bulletins and price sheets.
The Dayton Pump & Manufacturing Co.
DAYTON, OHIO New York, N. Y., 30 E. 42d St.

No. 2A Thermostat
ROBERTSHAW MFG. CO. YOUNGWOOD, PA.
The standard for 30-60 gal. boilers, and single coil heaters or equivalent. Has ¾-in. gas openings.
We Make All Sizes

In the Soderman's Game since '93
For a quarter of a century, Allen non-acid sodering fluxes have been helping a few thousand metal workers, plumbers and steamfitters to do, with ease, what their business rivals with ordinary fluxes couldn't do at all. "Better joints made quicker, and made to last." That's our promise. Send for circulars and samples. L. B. ALLEN COMPANY, 4526 No. Lincoln St., Chicago, Illinois.

DESOLVO Clears Clogged Pipes
The Original and Only pipe cleaner that can be used successfully with Cold water.
Used by progressive plumbers everywhere.
Order from your jobber.
The Chamberlain Company
Manufacturing Chemists Pittsburgh, Pa.
K-K Cleans closet bowls "the sanitary way."

PORTABLE SHOWERS
SPECIAL PRICES IN DOZEN LOTS
SHOWERS OF ALL DESCRIPTIONS
GOETZ BRASS COMPANY
630 N. FRANKLIN ST. CHICAGO, ILLINOIS

Cyclone Ventilators
make toilet rooms odorless and sanitary. No chemicals. In demand wherever there is a water closet.
Use on old or new work. Always satisfactory. Good profit and a business-getter for the plumber.
Write for details.
SANITARY APPLIANCE CO., Mfrs., Neenah, Wis.

WE BUY
Iron Pipe Couplings
SPOT CASH
How many, either pounds or pieces, have you of various sizes?
GWILLIAM SUPPLY COMPANY
615 Christain Street PHILADELPHIA, PA.

Warco

Planished Steel Invisible Hinged Adjustable Floor and Ceiling Plate

is a heavy stamped steel plate substantially constructed. It is nickeled on copper and highly polished.

Made in all sizes from ⅛-inch to 3 inches.

It may be cut to fit any condition. Can't break and will stay where it is placed.

The design is handsome and the finish cannot be equalled by any other plate on the market.

Ask for full details, prices, etc.

W. A. RUSSELL & COMPANY
63 W. 37th Street
New York City

WILKS Water Heater and Garbage Burner

is made of heavy steel boiler plate and tested to 100 lbs. hydrostatic pressure.

Garbage grate is made of best boiler tubing, the ends of which are expanded in the openings in the inner shell, making grate part of heating surface.

Constant circulation of water through tubes greatly increases efficiency of heater.

In outer shell, opposite ends of tubes are cleanout plugs which may be removed to clean tubes. Cleanouts are also provided for removing sediment in water jacket.

Large, convenient doors, rocking boiler grate and wide deep fire pot.

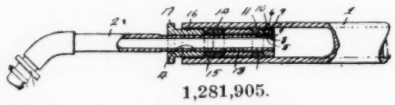
The name WILKS on a water heater and garbage burner is a guarantee both to steamfitter and owner.

Write for Catalog and Trade Discount

S. Wilks Mfg. Co.
3517 Shields Ave.
Chicago

Heating Department.

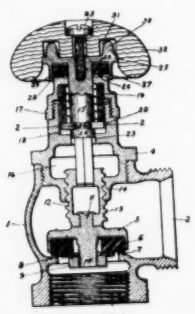
1,281,905. Pipe Coupling. Jacob L. Broschart, Trenton, Mo. In a pipe coupling, the combination with a pair of pipe sections, one in surrounding telescopical spaced relation with respect to the other, the inner section received by the outer section and threaded throughout its inclosed length, of a collar detachably threaded and locked on the inner end of the inner section, an expansible packing on the part of the inner section adjacent said collar, a second expansible packing in surrounding relations to the inner section, a spacing sleeve on the inner section interposed between the two packings, a second collar in surrounding relation to the inner section and in contact with the second packing, and a sleeve having a nut portion threaded on



1,281,905.

the inner section and telescoping the outer section in contact with the second collar and being adjustable toward the first collar, whereby, upon such co-operation between the first collar and the second sleeve, said expansible packings are expanded toward and firmly into contact with the inner wall of the outer section.

1,281,496. Valve. William P. Bovard, Mansfield, Ohio, assignor to the Ohio Brass Co., Mansfield, Ohio, a corporation of New Jersey. In a valve, a casing having a guide formed therein, a stem mounted in the guide and in close relation thereto, a flange provided on the stem, a cap secured to the casing, a packing member interposed between said cap and flange, a spring, and a U shape washer removably mounted in a groove on the stem adapted, when in position, to combine the stem, packing member, cap and spring into a single working unit, substantially as described.



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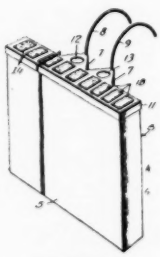
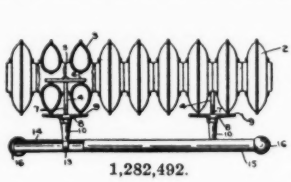


1,281,367.

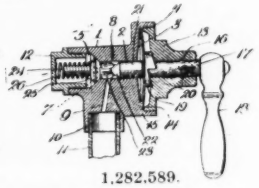
1,281,367. Humidifier. Herbert P. Heiss, Chicago, Ill. A humidifier comprising a relatively thin, tall receptacle having a plurality of angular, lateral projections in its rear wall; a cover having a marginal edge encompassing the top marginal edge of the receptacle, having spaced apart, transversely extending slots, at frequent intervals in its wall and perforations for filling, overlying said angular projections, in combination with a capillary wick or strip of porous fabric threaded through said slots

having portions extending near to the bottom of the receptacle at each end of the cover and providing large exposed surfaces on top of the cover.

1,282,492. Radiator Foot Rest. Henry A. Thexton, Minneapolis, Minn. A radiator foot rest comprising a support having means for securing it to a radiator section and including a bolt having a threaded outer end, a shank having a threaded socket to receive the end of said bolt and provided with a head having flattened surfaces, said shank having a passage therethrough to allow said bolt to enter said head, and a tubular member of spring material having a longitudinal slot therein to receive said head and wherein said shank is moved a quarter turn to engage said head with the walls of said tube.



1,282,492.

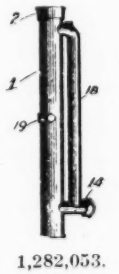


1,282,589.

1,282,589. Self Closing Steam Valve. Henry D. Kelly, Kansas City, Mo. A steam valve comprising a casing having a diaphragm chamber, a valve chamber, a bore or passage connecting said chambers, a vent and a port communicating with the bore or passage and a steam passage leading to the valve chamber, a stem fitting slidingly in said passage connecting said chambers and provided with a circumferential channel and a longitudinal channel establishing communication between said vent and port, a valve secured to the said stem within the valve chamber, yielding means for holding the valve seated, a spring-metal diaphragm in the diaphragm chamber, means securing the diaphragm in said chamber with a steam-tight joint, and means carried by the diaphragm securing means, for operating said diaphragm and causing the same to impart endwise movement to the said stem and consequently unseating movement to said yielding-seated valve.

Plumbing Department.

1,282,053. Waste Pipe Fitting. Edward H. Donahoe, Peoria, Ill. In a combination waste and vent fitting, the combination of a stack, a main inlet member communicating with and at an angular relation to the lower end of the stack, a secondary inlet member communicating with the stack within siphoning distance of a main inlet, a vent duct communicating at its lower end with the said secondary inlet member and communicating at its upper end with the stack at a distance above the siphoning area of the main



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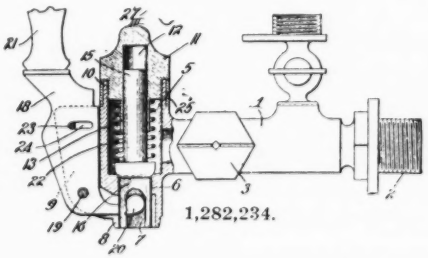


1,282,234.

inlet connection, and an inlet member connected directly to the stack intermediate of the upper and lower ends of said vent duct so as to discharge directly into the stack, intermediate of the ends of said vent duct.

1,282,234. Faucet. Henry D. Kelly, Kansas City, Mo. A faucet provided with a vertical cylindrical chamber, a spout connected with the lower end of said chamber and provided

Value Received

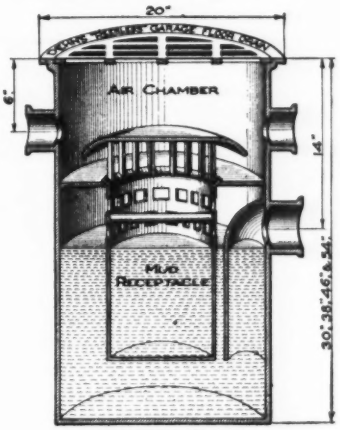


Fig. 62 Patented

When you install Dehn's "Peerless" Garage Drains your clients never stop talking about it. A wonderful installation. Value received.

1897 — 1918

COMPOUND INJECTOR & SPECIALTY CO.

Originators, Designers and Sole Manufacturers of Dehn's Sanitary Safeguards

419-421 N. Laramie Ave., Chicago, Ill., U. S. A.

A Few Reasons Why You Should Install the EXCELSO WATER HEATER

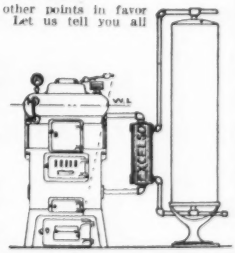
Most satisfactory way to heat domestic water.
Saves fuel and money.
No interference with firing.
Assures even temperature of water day and night.
Easy to install on any steam or vapor boiler.
Makes you a good profit. Every one installed sells more.
Made in three sizes for use below water line for tank capacities of 40, 70 and 100-gal. Also used to heat storage tanks of any size up to 800-gal. by use of live steam.
There are many other points in favor of the EXCELSO. Let us tell you all about it.

Capacities and Price List

When Used Below the Water Line

No. 2	40	Gal. Cap.	$20.00
No. 3	70	Gal. Cap.	30.00
No. 4	100	Gal. Cap.	40.00
When live steam is used			
No. 1	40	Gal. Cap.	$15.00
No. 2	100	Gal. Cap.	20.00
No. 3	250	Gal. Cap.	30.00
No. 4	400	Gal. Cap.	40.00

Liberal discount to the trade.



Showing Heater Connected to a Vertical Type Boiler

Write Today

EXCELSO SPECIALTY WORKS

1377 Main Street, BUFFALO, N. Y.

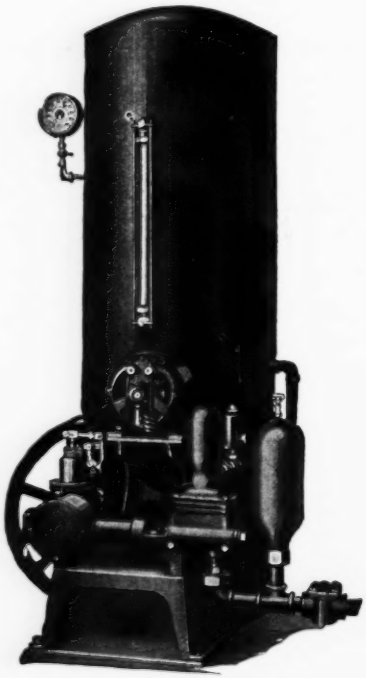
Now Is the Time

for the plumber to "cash in" on the Water Supply business. Every farm and country home that is not already equipped with adequate water supply is a live prospect for

ROBERTS
House Pumps

The ROBERTS line covers a pump or complete outfit for every requirement. They are furnished either for water or electric drive.

If you are puzzled as to the right pumping equipment for that next job, investigate the ROBERTS.

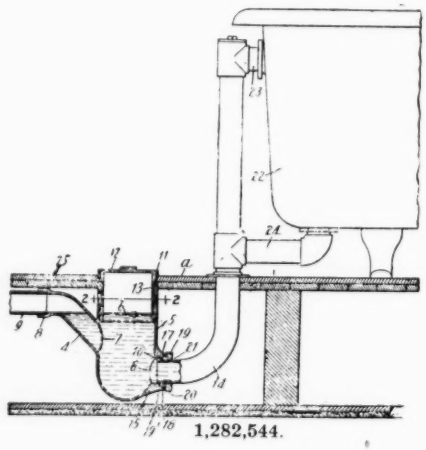


Write for literature.

The Geo. J. Roberts Co.
DAYTON, OHIO

with a bifurcation in the front portion of its wall, and a circular flange forming a guide and an upwardly-facing valve seat at the lower end of said chamber, a cap closing the upper end of said chamber, provided with a socket alined with the axis of said valve seat, a valve upon said seat and provided with a stem slidingly engaging said socket and with a depending stem slidingly engaging the guide wall of said flange, a spring fitting around the first-named stem and bearing at its ends against the valve and cap to hold the former seated, a lever mounted on the faucet and provided with a foot extending through the bifurcation of the spout and engaging the depending valve stem to unseat the valve when the lever is pulled, means for engaging the lever to limit the valve-opening movement thereof, and a ring mounted on the casing of the valve for rotation in a horizontal plane, and provided with an arm for disposal in the path of closing movement of the lever to hold the valve open.

1,282,544. Trap. Jeremiah J. Curtis, Wollaston, Mass. A trap having, in combination, a hollow body portion open at its upper end and having an inlet port adjacent its closed lower end and having also a discharge port, the space in said body portion between said ports being unobstructed, an inlet pipe and a discharge pipe connected to said inlet and discharge ports, respectively, said discharge pipe extending upwardly from said discharge port and having an outlet opening, the bottom of which is above



1,282,544.

the top of said discharge pipe, a removable cover fast to the upper end of said body portion, a cylindrical flange on said cover projecting downwardly into said body portion and terminating below the bottom of said discharge pipe outlet, and above the top of said discharge port the outer diameter of said cylindrical flange being less than the inner diameter of that portion of said trap to which said cover is fastened, whereby a space is provided between the outside of said cylindrical flange and the inside of said body portion and whereby said flange will project below the permanent water level in said trap and outlet pipe and the water will have an unobstructed flow through said trap from said inlet port to said discharge port.

The Oahu Sugar Co., of Honolulu, Hawaii, is preparing for the erection of a $60,000 hospital building for its employes at Waipahu in the Ewa sugar growing district.

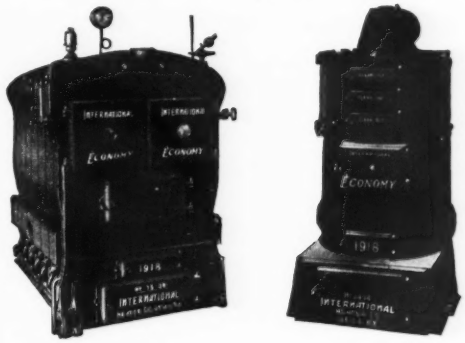
Wm. J. Kelly, of Camden, has secured the contract for the installation of the plumbing, and L. S. Magon, of Philadelphia, that for the heating, in 100 houses being erected in Camden, for the New York Ship Building Co.

(With Apologies to K. C. B.)

Are you getting prepared
* * *
For the after-the-war
* * *
Building activity?
* * *
For nearly four years
* * *
The normal course
* * *
Of American industry
* * *
Has been diverted
* * *
From its regular channels.
* * *
The flood gates are down now
* * *
And within a few months
* * *
Thousands of proposed
* * *
New buildings, additions,
* * *
And alterations
* * *
Will be started.
* * *
Nothing can stop this
* * *
Natural resumption of
* * *
Normal business activity.
* * *
Begin to lay your plans now.
* * *
Do more advertising—
* * *
Send out letters to
* * *
The contractors,
* * *
Telling them you are ready.
* * *
Keep your ear to the ground
* * *
And boost—always.
* * *
Set your house in order
* * *
And be ready to get off
* * *
When the starting gun is fired.
* * *
In the meantime
* * *
Look over your equipment.
* * *
Get your stock and tools
* * *
Ready to leap
* * *
Over the Top.
* * *
"Zero Hour" is almost
* * *
At hand.

Buy U. S. War Savings Stamps.

at the sign of good heating
INTERNATIONAL BOILERS & FURNACES



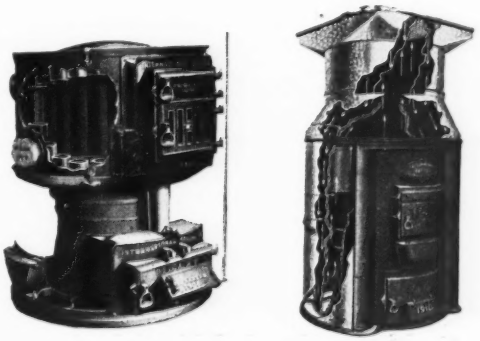
Market conditions during the current year have developed a tendency toward radical changes in the plumbing and steamfitting trade.

Business had to be sought for in new channels. Many dealers have felt the need of equipping themselves to more completely meet the heating requirements of all their customers.

What is more logical than to turn to one of the most complete lines of dependable heating apparatus in America?

INTERNATIONAL
BOILERS FURNACES ONE-PIPE HEATERS

Why not write for the **INTERNATIONAL** catalog and put yourself in position to be THE **Heating Man** in your town?



INTERNATIONAL HEATER CO.
UTICA, N. Y.

Classified Advertisements

The charge for advertisements under this heading is $1.00 for 25 words or less, including heading and address; 4 cents each for additional words. To insure insertion, copy and remittance should reach us by Wednesday morning.

Situations Open

WANTED—BY MANUFACTURER OF plumbers' brass goods, young man for cost accounting department. Excellent opportunity for future. Address 2575, care "Domestic Engineering", 407 S. Dearborn St., Chicago. 11-30/4

WANTED — EXPERIENCED Plumbing, Heating and Mill Supply Salesmen for middle Western territory. Leighton Supply Co., Fort Dodge, Iowa. 12-7-14

Situations Wanted

POSITION WANTED — TRAVELING salesman, experienced plumbing, heating, mill supplies, offers his services to the highest bidder. Competent as sales manager, etc. Address 2574, care "Domestic Engineering", 407 S. Dearborn St., Chicago. 11-30; 12-7-14.

STEADY POSITION WANTED—AS Engineer and Draftsman on Plumbing, Heating and Ventilating, by married man with six years' experience. Best of references. Address 2576, care "Domestic Engineering," 407 S. Dearborn St., Chicago. 12-7

POSITION WANTED—BY LIVE MARried man thoroughly familiar with plumbing and heating business, as estimator or manager of plumbing and heating concern. Address 2572, care "Domestic Engineering," 407 S. Dearborn St., Chicago, Ill. 11-23/12-14

For Sale.

FOR SALE—PROFITABLE PLUMBING and heating business. Established 1893. Can reduce stock to suit buyer. Owner wishes to retire. Henry H. Kruger, Omaha, Nebr. 11-30/12-7

FOR SALE—PLUMBING AND HEATING Business in N. E. Iowa. Established 20 years. Only shop in live town of 1,200, with water and sewer. Reasons for selling, have another business and cannot attend to both. For further information address, J. D. Becker, Calmar, Iowa. 12-7-21

Miscellaneous.

PLUMBING AND HEATING BLANKS, Contract Cost Books, Time Sheets, Job Tickets, Order Books. Send for samples and prices. We can save you money. Haddon Specialty Co., Haddon Heights, N. J. 11-23; 12-7

WE BUY USED C. I. BOILERS AND radiators. D. B. Plumbing & Heating Sales Co., Ft. Wayne, Ind. 11-2/2-1

WE BUY IRON PIPE COUPLINGS—spot cash. How many, either pounds or pieces have you of various sizes? Gwilliam Supply Co., 615 Christian Street, Philadelphia, Pa. 10-6,tf

SELL YOUR SURPLUS COUPLINGS and fittings. Write us. The A. & J. Mfg. Co., 557 W. Lake St., Chicago. tf

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Government Proposals

TREASURY DEPARTMENT, Supervising Architect's office, Washington, D. C., November 19, 1918. SEALED PROPOSALS will be opened in this office at 3 p. m., December 19, 1918, for additions to plumbing, etc., in the United States Marine Hospital, Cleveland, O., in accordance with the specification and drawing, copies of which may be had at this office or at the office of the Custodian, Cleveland, O., in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect.

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